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SYMPATHECTOMY IN THE TREATMENT OF PERIPHERAL VASCULAR SCLEROSIS

GEZA de TAKATS, M.D.
EDSON FAIRBROTHER FOWLER, M.D.
PAUL JORDAN, M.D.
Chicago
and
CAPTAIN THOMAS C. RISLEY
Medical Corps, Army of the United States

The causes of and effective measures against arteriosclerosis are highly debatable and mostly not understood. For a general review of the vast amount of experimental and clinical research on this subject we refer to the exhaustive critical review of Hueper.[1] Unquestionably, as this author points out, a fatalistic attitude prevails toward its prevention and treatment. In a recent monograph on arteriosclerosis Moschcovitz[2] came to the conclusion that "unless the individual is cut down by intercurrent disease, death is invariably the result of arteriosclerosis. It is the inevitable destiny of all creatures who possess a cardiovascular system with intravascular pressure. . . . Arteriosclerosis being an inevitable consequence of aging and therefore an irreversible process, it is hardly likely that any method of therapy will ever be discovered which will restore the diseased vessels to their normal texture, unless we can cure mortality. Nor can arteriosclerosis be prevented, no more than gray hair or facial wrinkles."

It was exactly this type of attitude which we took when scattered reports of sympathectomy for peripheral arteriosclerosis of the lower extremities began to appear in the literature.[3] Our indications for sympathectomy in peripheral vascular disease were tabulated in 1937, and, since it was believed that sympathectomy is useful only in vasospastic states with or without an organic component, arteriosclerosis had not been considered. In fact one of us (G. de T.) felt that it was an unnecessary type of surgery which discredited the excellent results obtained in Raynaud's disease, Buerger's disease and many other vasospastic phenomena.

Two observations, however, changed our pessimistic attitude on this subject. It was noted, following the communications of Atlas[4] and of Freeman and Montgomery,[5] that patients with obliterative vascular sclerosis could walk farther after a paravertebral sympathetic block with procaine; their claudication improved while under the effect of the block. In addition, some of them exhibited angiospastic phenomena while walking, which was abolished by a paravertebral block.[6] More impressive yet was the following case history:

J. P., a man aged 45, a pedler of Russian-Jewish extraction, was admitted to Research and Educational Hospitals on Dec. 7, 1940. His difficulty in walking started five years previously, but ever since his late twenties he had had "rheumatic" pains in the calves. He had no other complaints on admission except that after two blocks cramping in the left calf became so severe that it was necessary for him to stop. After a few minutes he could start walking again. He smoked heavily.

On admission he was given our routine cardiovascular work-up consisting of a thorough physical examination, the study of the eyegrounds, an electrocardiogram, a 2 meter chest film, a concentration-dilution test and a paravertebral sympathetic block. The only positive findings were a closed left radial artery and closure of both popliteals with well pulsating femoral arteries. Neither the eyegrounds nor films of the thighs showed any arteriosclerosis. The blood cholesterol was 210 mg. per hundred cubic centimeters of blood. The blood pressure was 140/80 mm. of mercury.

Because of his age, race, heavy nicotine intake, lack of vascular sclerosis elsewhere and mainly because of the closed radial artery, which is frequent in Buerger's disease and seldom occurs in arteriosclerosis, a diagnosis of a late, burned out thromboangiitis obliterans was made. Since a paravertebral block raised the temperature of all toes and increased his walking ability from 300 to 900 steps, a left lumbar sympathectomy was performed.

The operation was done with the usual anterolateral muscle-splitting extraperitoneal approach, and the left lumbar sympathetic trunk was removed between the brim of the pelvis and the lumbocostal arch. On palpating the aorta we felt large oval atheromas, making the diagnosis of thromboangiitis untenable. The patient had unquestionably a presenile atheromatosis.

Not only did the patient's left lower extremity remain warm and dry, but his walking ability rose to 6 blocks, at which time cramping became obvious in his right extremity, not operated on. Four years later he still maintained this result.

This observation, shortly followed by others together with the convincing article of Trimble and his associates, which appeared in April 1944,[7] encouraged us to extend the use of lumbar sympathectomy to patients

From the Department of Surgery, University of Illinois College of Medicine, the Research and Educational Hospitals, and St. Luke's Hospital, Chicago, and the Veterans Facility, Hines, Ill.

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3. Harris, R. I.: The Role of Sympathectomy in the Treatment of Peripheral Vascular Disease, Brit. J. Surg. **23**: 414, 1935. Leriche, R., and Fontaine, R.: Einige Bemerkungen über 1199 Operationen am Sympathikus, Arch. f. klin. Chir. **186**: 338, 1936.
4. Atlas, L. N.: Lumbar Sympathectomy in the Treatment of Selected Cases of Peripheral Arteriosclerotic Disease, Am. Heart J. **22**: 75, 1941; **23**: 493, 1942.
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6. Pearl, F.: Angiospastic Claudication, with a Report of 6 Cases, Am. J. M. Sc. **194**: 301, 1937.
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suffering from arteriosclerosis. Obviously case selection seemed very important and we shall define briefly our indications for operation in this type of patient.

CASE SELECTION

Both thromboangiitis obliterans and arteriosclerosis may produce a diffuse involvement of the entire vascular tree; but even in arteriosclerosis the involvement may predominate in the lower extremities with surprisingly little involvement elsewhere. Visceral involvement is studied with funduscopy, an electrocardiogram, a 2 meter chest film and a concentration-dilution test. Films of the thigh may detect calcification, although many atheromatous occlusions lack medial classification. Severe cerebral, cardiac or renal involvement naturally contraindicates any surgical attack on the vascular occlusion of the lower extremities. A patient who has had a coronary occlusion should not be subjected to a lumbar sympathectomy; but angina on effort is not a contraindication although it must be recognized that, when claudication improves, cardiac burden increases.

A paravertebral sympathetic block must precede all lumbar sympathectomies. The increase in skin temperature of the digits, the improvement in walking ability and the shortening of the venous filling time are observed after paravertebral block with procaine just as in cases of thromboangiitis obliterans.[8] When the digits do not warm up after sympathetic block but remain cold or show a paradox drop in temperature sympathectomy may precipitate gangrene, as in the cases reported by Atlas.[4] It is our conviction that such an occurrence can be predicted and avoided by the measurements of digital temperature. While in Buerger's disease, with its usually abundant collateral circulation, a paradox drop in skin temperature calls for a minor amputation combined with sympathectomy, we have very seldom resorted to this combination in sclerotic patients. Certainly minor amputations in arteriosclerotic patients are tolerated very poorly with the exception of the diabetic gangrenes of infectious background.[9]

The arterial occlusion—mostly caused by ulcerated atheromas with superimposed thrombosis or an occasional embolus from an aortic plaque—is at popliteal, femoral or iliac levels. Closure of both femoral arteries with claudication in gluteal or genital areas with sexual weakness is rather characteristic of an aortic occlusion, which, since it occurs gradually, is perfectly compatible with fair nutrition of both lower extremities. Such patients, if their terminal vascular bed is intact, experience benefit from a sympathectomy, whereas a diffuse arteriolar sclerosis, with relatively little involvement of the major arterial pathways, is unsuitable for operation.

As Louis G. Herrmann pointed out in his monograph on passive vascular exercise,[10] this is the kind of patient on whom suction and pressure therapy fails. This is equally true of intermittent venous hyperemia, which we have routinely used for all our patients suffering from organic arterial occlusions and which is much more effective in the sympathectomized extremity, since reflex vasoconstriction originating from venocapillary distention is abolished.[11] One can state then that the higher occlusions are not necessarily more refractory to surgical treatment, provided the terminal bed is not concomitantly involved. Clinically the postural changes of color (pallor on elevation, rubor on dependency) indicate poor flexibility of the capillary bed and capillary stasis.

There is one other criterion which may help to decide for or against sympathectomy in a given case. We mention this, however, with hesitation, since it is not measurable and is purely subjective. It is the relief of pain, which is very striking in some patients, entirely absent in others. The relief of pain may be due in some instances to an infiltration of the lumbosacral plexus with procaine and is thus due to a sensory, not a sympathetic, block. The relief of pain, however, may be observed in cases of severe ischemic neuritis which act not unlike a causalgic state and which may well be due to a volley of sympathetic impulses acting on demyelinated sensory fibers.[12] The hot, burning pain of this neuritis, which is aggravated by heat, relieved by cold and elevation, occurs in arteriosclerotic patients with and without diabetes. It is often accompanied by severe diffuse osteoporosis.[13] Such patients mostly require amputation for the intractable pain, but a trial with a sympathetic block is sometimes rewarded by a cessation of pain, permitting a sympathectomy. Ordinarily the pain has been allowed to persist so long that the patient is addicted to narcotics and the pain can be interrupted only at higher sensory levels.[13]

Age, per se, is not a contraindication, but obviously common sense must prevail. The number of our sympathectomies done on patients over 60 years of age is seven, the oldest patient being 66 years old. Whether this age group would fare better with paravertebral blocks of alcohol is very doubtful. We used this method in our earlier experience[14] but have abandoned it, since infiltration of somatic nerve elements, plexuses or undivided anterior primary rami occurs, and while the percentage of this mishap is not too great (2 to 3) the crippling effects are disheartening. In 1 arteriosclerotic patient aged 72 years in whom a paravertebral alcohol block was done elsewhere a permanent foot drop developed, together with an intractable burning pain corresponding to the distribution of the third and fourth lumbar segment. Two of our own patients had ilioinguinal and genitofemoral neuralgia and quadriceps weakness for many months. For this season our clinic has abandoned the use of paravertebral alcohol injections in spite of recent favorable reports.[15]

Briefly, then, our indications for sympathectomy in arteriosclerosis of the lower extremities may be summed up as follows:

INDICATIONS FOR SYMPATHECTOMY IN PERIPHERAL ARTERIOSCLEROSIS OF THE LOWER EXTREMITIES

In patients with popliteal, femoral or aortic occlusions who show a favorable response to paravertebral block with procaine and whose visceral vascular involvement is subclinical or

8. de Takáts, G.: The Value of Sympathectomy in the Treatment of Buerger's Disease, Surg., Gynec. & Obst. **79**: 359, 1944.
9. McKittrick, L. S., and Pratt, T. C.: Principles of and Results After Amputation for Diabetic Gangrene, Ann. Surg. **100**: 638, 1934.
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slight (no hemiplegia, no coronary occlusion, no advanced nephrosclerosis). The age group between 40 and 50 is most favorable.

In patients without and often with diabetes, whose chief complaint is continuous intractable burning pain associated with osteoporosis who obtain relief from paravertebral block and who otherwise would require a supracondylar amputation (a causalgic state).

THE MATERIAL STUDIED

The material studied consisted of 25 patients.[15a] Their age varied between 39 and 66 years. They were placed in the category of the vascular sclerotic because of (1) definite evidence of sclerosis elsewhere, (2) no history of segmental phlebitis or arteritis in earlier years, no involvement of radial arteries, or (3) high pulse pressure, hypertension, hypercholesteremia or hyperglycemia.

While there was occasionally difficulty in separating a late burned-out case of thromboangiitis obliterans approaching the age of sclerosis from a presenile atheromatosis without calcification, the cases can usually be kept apart. The borderline case must be treated alike anyway, dependent on the activity of the process, on the collateral involvement and on the site of occlusion (whether arterial or arteriolar).

Of the 25 patients, 6 were from St. Luke's Hospital, 11 from the Research and Educational Hospitals and 8

TABLE 1.—*Lumbar Sympathectomy for Peripheral Vascular Sclerosis*

Age Groups	Number of Cases
38 to 50	12
50 to 60	11
60 to 66	2
Total	25

from the Veterans Facility at Hines, Ill. There was 1 patient below 40, 15 patients were between 40 and 50, 11 patients were between 50 and 60 and 2 patients were over 60 years (table 1).

Of the 25 patients retinal sclerosis was present in all, coronary sclerosis in 18, previous coronary occlusion in 2, nephrosclerosis in 5, hypertension in 10 and lipemia in 3 (table 2). The average walking ability before the operation ranged from half a block to two blocks, indicating the severity of the disease encountered. The average postoperative walking ability ranged from one block to several miles. Since this type of improvement lends itself poorly to statistical inquiry, a few illustrative cases are presented in more detail:

CASE 1.—R. E. S., a man aged 51, a mail carrier, developed a sudden popliteal occlusion due to popliteal atheromatosis. He could not walk more than 300 feet. Left lumbar sympathectomy was done within a few weeks. His walking ability is now unlimited; he has resumed his work as a mail carrier. The duration of follow-up has been one year.

CASE 2.—R. A., an amusement park operator, could walk less than one block without pain. His job required a great deal of walking. He was obese, with a blood cholesterol of 320 mg. per hundred cubic centimeters. Following bilateral lumbar sympathectomy he could walk three hours continuously without pain.

CASE 3.—G. H. R., a man aged 44, had had symptoms of intermittent claudication for six years. He had lost his left leg previously at the midthigh. His preoperative walking distance was three fourths of a block and he had rest pain at night. A diagnosis of chronic aortic occlusion was made. Following right lumbar sympathectomy he can walk from two and one-half to three blocks. His toes and foot do not get numb now, but a mild ache develops in the calf. The foot is warm and dry. The duration of follow-up has been ten months.

TABLE 2.—*Lumbar Sympathectomy for Peripheral Vascular Sclerosis*

Degree of Involvement (25 Cases)	
Retinal sclerosis	25
Coronary sclerosis	18
Coronary occlusion	2
Hypertension	10
Nephrosclerosis	5
Lipemia *	3

* Blood cholesterol over 250 mg. per hundred cubic centimeters.

CASE 4.—A. N., a man aged 49, a laborer, had claudication for several years, completely incapacitating him for any work. He had bilateral lumbar sympathectomy on Sept. 28 and Oct. 22, 1943 and could be reexamined several times, the last time two years after operation. His walking ability increased from two to four blocks. Both feet are warm and dry. He is doing indoor work, and his feet seem well protected from the effects of minor injuries.

CASE 5.—S. V., a man aged 66, a carpenter, had a left lumbar sympathectomy on May 16, 1944 for severe obliterating arteriosclerosis occluding the femoral artery. His right leg was then pulseless, but he had no complaints regarding it. He came back a year later with a warm dry left foot and good skin texture. The right foot (previously the better foot) had become frankly gangrenous and had to be amputated.

CASE 6.—J. W., a man aged 55, a veteran, had lost his left leg previously because of obliterating arteriosclerosis. His right lower extremity became intractably painful and ulcerated. Circulatory tests revealed the proper level of amputation to be above the knee, and a Callander-type of amputation would have been ordinarily performed. In order to save his knee joint a preliminary sympathectomy was done which permitted a lower-leg amputation. A well vascularized stump was obtained.

These 6 case histories illustrate the different situations which were met in this series. There are many others but they mainly group themselves as follows (table 3):

GROUP 1.—Middle aged sclerotic patients with a walking ability of a few blocks. The texture and color of their skin is normal. Popliteal or femoral pulses are absent. Lumbar sympathectomy has greatly improved

TABLE 3.—*Lumbar Sympathectomy for Peripheral Vascular Sclerosis*

Grade	Claudication	Trophic Change	Result
1	2-6 blocks	None	Improves walking
2	½-2 blocks	Capillary stasis; digital sclerosis	Prevents gangrene
3	Few steps	Ulceration; gangrene	Permits lower amputation
4	Intractable rest-pain	Glossy edema; osteoporosis	Stops pain; prevents amputation

their walking ability, occasionally for unlimited distance. Of 9 patients in this group 2 showed more angina on effort since they could walk farther.

GROUP 2.—Middle aged or elderly sclerotic patients. Walking ability ranged from one-half to two blocks. Evidence of some arteriolar and capillary stasis was present, in addition to the major arterial occlusion. Operation was mainly undertaken to prevent gangrene.

15a. A report on additional material is now in preparation.

Postoperatively their walking ability did not improve appreciably. Nevertheless not a single patient developed gangrene on the sympathectomized side, while 2 patients lost their legs which had not been operated on, which were originally the better ones. Ten patients belong to this group.

GROUP 3.—Patients requiring amputation or who had already lost one leg by amputation. A preliminary lumbar sympathectomy enabled us to do three toe amputations and three lower leg amputations with a type of circulation which in our previous experience necessitated a supracondylar amputation. Six patients belong to this group.

GROUP 4.—A type of patient which, because of intractable pain, diffuse osteoporosis and glossy edema, we believe belongs to the causalgic state. Such patients have closed arteries and are in an advanced stage of arteriosclerosis with or without diabetes. Their intractable symptoms have previously indicated amputation. The peripheral nerves are demyelinized in segments. The deep tendon reflexes are diminished or absent. If sympathetic block relieves the burning, throbbing pain, sympathectomy is indicated. Five patients belong to this group and not one has lost his leg so far. This group is not unlike the one met in certain patients suffering from trench foot or air-hammer disease and seems to be due to an ischemic neuropathy and not to sympathetic paralysis.

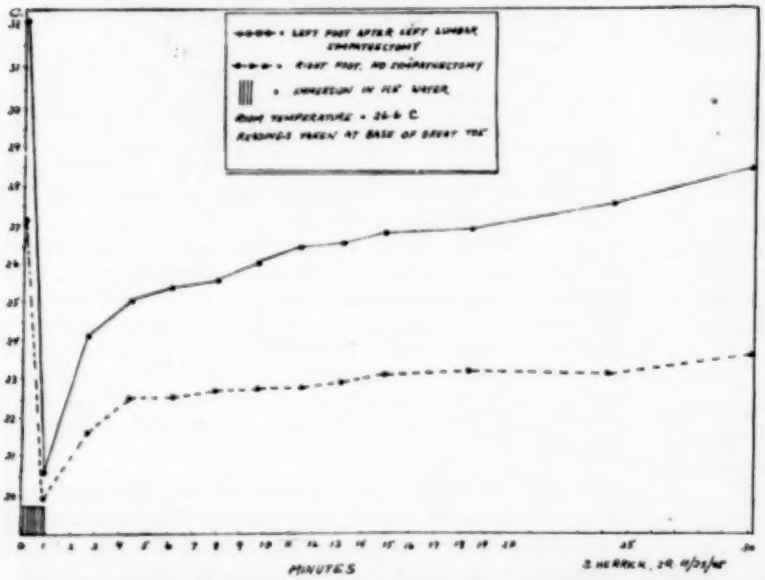

Fig. 1.—Effect of ice water on the sympathectomized extremity. Solid line, drop and recovery of toe temperature after immersion of sympathectomized foot into ice water for one minute; interrupted line, control, extremity not operated on exposed to identical conditions. Note that the sympathectomized limb warms up much faster than the one with intact vasomotor apparatus. Readings on a patient with obliterating arteriosclerosis whose left, sympathectomized, limb showed more severe involvement.

COMMENT

In analyzing the effects of sympathectomy on an extremity crippled by arteriosclerosis, one must not expect a decided increase in basal blood-flow. By basal blood-flow we mean the amount of blood per hundred grams of tissue as measured by a plethysmograph under basal conditions. Our plethysmographic studies undertaken with a modification of Abramson's method by Donald Miller were interrupted during the war.[16] But it became obvious that the basal blood-flow determined on patients without breakfast, after thirty minutes of rest, were greatly influenced by emotional stimuli, drafts and painful stimuli, all of which are known to activate the peripheral sympathetic outflow. Lumbar sympathectomy then frees the extremity from such fluctuations, which are of surprising magnitude. While the sympathectomized vessel reacts to the direct effect of cold by constriction, it warms up faster exposed to warmth; on the other hand it cools off more slowly, having lost its vasomotor tonus. Reflex effects of heat and cold, however, are ineffective on the circulation of a sympathectomized extremity. Thus such a limb behaves as it would under a heat cradle surrounded by a temperature around 85 F., a temperature which abolishes vasomotor tone but which would be difficult to obtain on this continent continuously, even on the southern tip of Florida (fig. 1).

One can state then that the sclerotic individual, provided he protects himself from the direct effects of cold by warm wool socks and suitable footwear, maintains a circulation in his sympathectomized extremity in a Midwestern or Eastern climate which he would otherwise obtain only in a warm, semitropical environment. The beneficial effect of such climates on patients suffering from peripheral vascular disease is sufficiently known.

This effect of vasomotor palsy is well recognized and need not be further discussed. Much less attention has been drawn to the fact that the vasomotor tonus in the sitting and more in the standing position is high in the lower extremities. This is one of the mechanisms, notably the first line of defense, which maintains man's blood pressure in the erect position. That such postural vasoconstriction unfavorably affects a diseased vascular tree is obvious. This postural vasoconstriction is eliminated by lumbar sympathectomy so that vasomotor tonus is not any higher than in the horizontal position. This is not to say that the terminal vascular bed cannot contract on being distended by blood; that is, the intrinsic muscle tonus of the vessel reacts to stretch just as much as it reacts to cold after sympathectomy. Nevertheless, the shifting of blood which occurs in the standing person away from the depending portions of the vascular tree cannot take place.

It is curious that the second great therapeutic aid (the first being the even, warm climate) in the treatment of organic vascular lesions, namely rest in bed in the horizontal position, can be supplied to an ambulatory patient by sympathectomy, since it removes the excess vasomotor tone of the erect animal, man (fig. 2). Physiologists working with quadrupeds have frequently denied the lasting benefits of sympathetic denervation to the circulation of an extremity but obviously could not study this factor (fig. 3).

While intrinsic muscle tone is regained after a while in the sympathectomized vessels, our group showed several years ago that the venocapillary stretch produced by intermittent venous hyperemia is far more effective in the sympathectomized limb than in the extremity in possession of its vasomotor apparatus.[11]

Finally a last, insufficiently understood effect of sympathectomy must be mentioned, namely the striking effect of paravertebral block and also of sympathectomy on the constant burning pain which ischemic limbs exhibit, whether this ischemia is due to thromboangiitis, to arteriosclerosis or to an embolic occlusion. This is

16. Miller, D. S., and de Takáts, G.: Posttraumatic Dystrophy of the Extremities: Sudeck's Atrophy, Surg., Gynec. & Obst. 75: 558, 1942.

not to say that every case of ischemic neuritis is benefited by sympathetic interruption, since this is not the fact. It is well known that poorly vascularized extremities suffer a demyelinization of their somatic nerve fibers and give rise to intractable pain, loss of motor

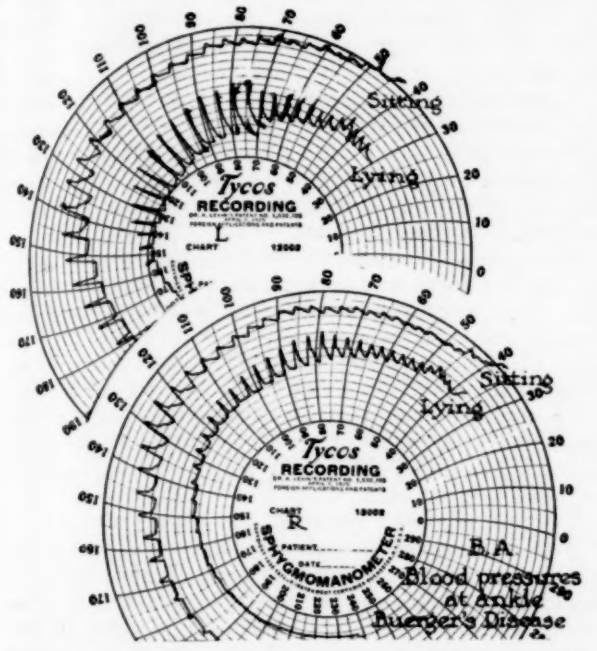

Fig. 2.—Effect of gravity in the lower extremities of a patient suffering from Buerger's disease. This patient has been selected for study since in the sclerotic ankle pulsations are hardly ever obtainable. The upper graph obtained from the left, less involved, extremity, shows a shift of the curve to the left because of rise in peripheral resistance and a decrease in pulse volume. On the right side with more advanced vascular impairment the rise in peripheral resistance is again obvious but the size of the spikes is not so striking because the vessels show less pulsatility.

function and loss of reflexes. This is especially pronounced in the diabetic neuropathies,[17] in which metabolic factors may play an additional role.

Why the chemical or surgical section of sympathetic fibers should eliminate the pain originating from the injured sensory nerves is unclear, since sympathetic nerves in the extremities are said not to contain any afferent fibers. The ingenious theory of Doupe [12] postulates that, because of the demyelinization of sensory nerve fibers, cross stimulation occurs between efferent sympathetic and the poorly insulated sensory axons, resulting in pain or even efferent vasodilatation as in the causalgic state. There is much to support this view, which has been discussed by us elsewhere.[18] It is a very useful working hypothesis.

Another cause for pain relief is more obvious. Most peripheral pain is bound to cause a reflex vasoconstriction in the same and also in other vascular areas. The tennis elbow (radiohumeral bursitis), a subdeltoid calcified bursa, a ligamentous strain maintain a diffuse vasoconstriction, the pathway of which one of us (G. de T.) illustrated several years ago.

This same reflex operates in the case of ischemic neuritis, thrombosed arterial segments or periarterial and lymphangitic inflammatory reactions. Sympathectomy abolishes this reflex and thus abolishes the pain due to vasoconstriction.

Throughout this discussion we have avoided the mention of vasospasm in arteriosclerosis,[19] and it is our belief that while this is an important factor in phlebitis and thromboangiitis obliterans it plays little if any part in the symptomatology of arteriosclerosis obliterans.

TABLE 4.—*Effects of Lumbar Sympathectomy on the Lower Extremity*

1.	The extremity warms up faster and cools more slowly on direct exposure; reflex effects of heat and cold are ineffective
2.	The high vasoconstrictor tonus in the sitting or standing position is abolished
3.	Vascular exercises such as intermittent venous hyperemia are more effective.
4.	Any cross stimulation between sympathetic and demyelinated sensory fibers is abolished

The excellent results obtained in this small but carefully selected series are due to the release of normal vasomotor tonus, which in turn insures an even blood flow uninfluenced by anything but the metabolic needs of the tissues [20] (table 4).

SUMMARY

A group of 25 patients suffering from vascular sclerosis of the lower extremities were treated with lumbar sympathectomy if after preliminary block of the lumbar sympathetics the temperature of the digits rose, if walking ability improved and if generalized vascular involvement was not extensive.

In one group of patients this resulted in a dramatic increase in walking ability.

In another group of patients given lumbar sympathectomy amputation was averted.

In a third group amputations could be performed at lower levels and in a fourth group intractable neuritic pain of the causalgic type was benefited.

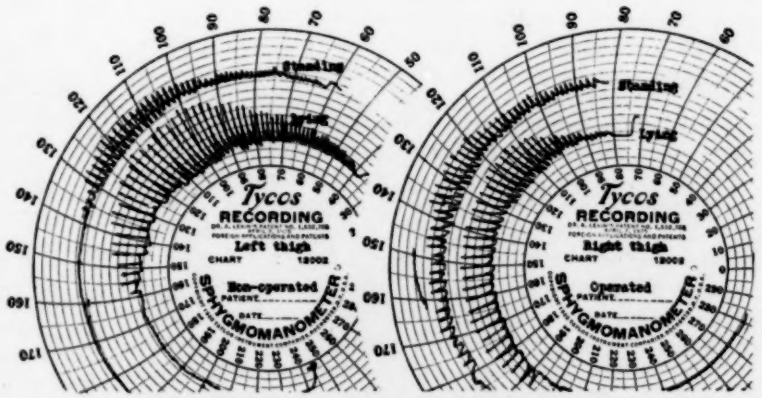

Fig. 3.—Oscillometric curves of a hypertensive arteriosclerotic patient whose right lower extremity has undergone sympathetic denervation. Note the vasoconstriction on the left graph while standing. The diastolic pressure rose from 75 to 95 mm. of mercury as measured by the oscillometer. On the right, sympathectomized, side there is no shift of the curve to higher levels, the peripheral resistance has not increased, and the pulse waves are only slightly decreased owing to the decreased cardiac stroke volume in the erect position. This graph indicates the elimination of postural vasoconstriction by sympathectomy.

In selected cases of peripheral arteriosclerosis lumbar sympathectomy has proved to be of great value.

122 South Michigan Avenue, Chicago 3.

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THE CRUSH SYNDROME IN OBSTETRICS AND GYNECOLOGY

NEWLIN F. PAXSON, M.D.
Professor of Obstetrics, Hahnemann Medical College
LEIB J. GOLUB, M.D.
Attending Gynecologist, St. Luke's and Children's Medical Center
and
ROBERT M. HUNTER, M.D.
Associate in Obstetrics, Hahnemann Medical College
Philadelphia

During the bombing of England in 1940 and 1941 many crushing injuries resulted. Increased interest was manifested in the characteristic urinary suppression, which became known as the "crush syndrome," that followed these injuries.

James Young [1] in 1942 reported similar urinary suppression seen in two types of obstetric condition, retroplacental hemorrhage and the trauma of labor. They caused massive damage to the placenta, uterine muscle and other pelvic tissue. In a careful study he showed that the syndrome included the following: (1) initial tissue damage; (2) shock, severe, moderate or at times absent; (3) urinary suppression leading to anuria or oliguria with urine containing casts and leukocytes, and (4) a rise in blood urea, which reached its height between the fifth and the ninth day and was followed by death or increased urinary output and recovery.

We are reporting 3 cases, 1 of retroplacental hemorrhage, 1 of ruptured uterus and the third a case of twisted ovarian cyst with bloody extravasation and urinary suppression. The last is a new finding which broadens the aspects of the crush syndrome to include other than obstetric hemorrhage.

REVIEW OF LITERATURE

The first recorded work in regard to urinary suppression following crushing injuries was published by Hackredt [2] in 1917. It was mentioned also in the German Army Medical Manual [3] during the first world war. Minami [4] in 1923 first gave the detailed microscopy of the kidney and described the presence of casts containing blood pigment in the renal tubules (figs. 2, 4 and 5). Baker and Dodds [5] in 1925 offered the explanation of obstruction of the renal tubules by blood pigment as the cause of urinary suppression.

In 1941, with the increase of crushing injuries, important studies were made by Bywaters and Beall [6] and later by Bywaters and Dible.[7] They demonstrated that the important renal changes are found in the collecting tubules (figs. 2, 4 and 5); the glomeruli are undamaged (figs. 2 and 3). The tubules contain casts, and some are plugged with granules of blood pigment and show degeneration of the epithelium, particularly in the second portion and in Henle's loop (fig. 4). Since this is the site of normal urine acidification and concentration, it seems to explain the clinical phenomena found in these cases of urine that is dilute, highly acid, low in urea and high in chlorides.

They concluded, therefore, that the chief changes in kidney function are the result of failure of the tubular epithelium to concentrate and reabsorb the glomerular concentrate, thus confirming the histologic findings of tubular damage without injury to the glomeruli.

Three theories are offered to explain the kidney damage: (1) shock followed by renal ischemia, (2) obstruction of the renal tubules by blood pigment and (3) release of toxic substances from the crushed muscle which causes the characteristic degeneration of the tubal epithelium.

Young and McMichael [8] reported 2 obstetric cases of prolonged labor followed by urinary suppression and high blood urea; 1 patient recovered and the other died of anuria on the eighth postpartum day. This was the first report to show the relationship of obstetric trauma to crushing injuries.

Dunn and Montgomery [9] believed that shock causes stagnation or ischemia of the entire glomerular system and that there is no mechanical obstruction to the tubules; the substance within the renal tubules is nothing but débris and blood, the result of stagnation which followed the shock occurring after the original trauma. They thought also that in some cases of abruptio placentae symptoms of crush syndrome developed because the kidney had been damaged previously by the preeclamptic state.

Young [1] in 1942 reported an extensive study of obstetric hemorrhage and its relation to the crush syndrome. He believed that neither obstruction of the kidney tubules nor shock is the cause. In order to prove his point he first compared 35 cases of postpartum hemorrhage, 12 cases of placenta previa with hemorrhage and 10 cases of retroplacental hemorrhage. The first two groups showed shock without blood extravasation into the uterine musculature but no renal impairment. In the group with retroplacental hemorrhage 10 cases showed renal impairment.

Young further analyzed 79 cases of premature separation of the placenta with albuminuric toxemia. In 59 cases bleeding was of the visible or frank type, and no case showed renal impairment. In 20 cases of the concealed type with blood extravasation into the uterine muscle 5 showed renal impairment of varying extent.

To disprove the shock theory, Young reported 1 significant case: A woman, nontoxic and at term, who arose about 7 a. m., voided as usual and at 8 a. m. was struck on the abdomen by a suddenly opened door. At 3 p. m. severe abdominal pain developed and shortly thereafter she collapsed. At 4 p. m., on arrival at the hospital, she showed a typical extensive abruptio placentae and died later. On catheterization only 3 ounces of almost black urine was obtained, thus indicating that the urinary suppression occurred at least seven hours before the shock from abruption. Against the theory of anuria caused by mechanical obstruction of the renal tubules by blood pigment he cited an instance in which a woman died nine hours after abruptio placentae. Necropsy showed renal tubules with no pigmented casts but extensive degeneration. In 2 other fatalities with anuria, 1 patient had a blood urea of 173 mg. per hundred cubic centimeters with typical tubular degeneration and numerous blood casts, while the other had a blood urea of 220 mg. per hundred cubic centimeters, typical tubular degeneration and no blood casts.

Young stated that he did not know the cause of the urinary suppression but postulated that a toxic sub-

From the Department of Obstetrics, Hahnemann Medical College.

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stance is formed in the traumatized muscle (skeletal or uterine) which causes degeneration of the epithelium lining the renal tubules and is the real cause of the anuria. He further postulated that the débris in the tubules is coincidental and not obstructive.

Eggleton, Richardson, Schild and Winton[10] conducted extensive experiments on traumatized dogs while maintaining normal blood pressure level and blood volume with infusions of plasma and saline solution. In spite of this precaution, renal impairment and increased nitrogen retention developed and the dogs died with the characteristic kidney finding of the crush syndrome. Diuretics were used in another series and the renal flow was actually increased, slightly lowering the mortality rate. The authors believed that renal ischemia is not the cause of the crush syndrome but that Young's theory of a toxic substance released in the traumatized muscle is perhaps true.

REPORT OF CASES

CASE 1.—*Retroplacental hemorrhage, with death from urinary suppression.*

Mrs. M. C. (fig. 1), aged 29, admitted to Hahnemann Hospital Feb. 1, 1943, had been pregnant for the first time in 1941, and at six months preeclampsia developed, with hypertension and albuminuria followed by premature placental separation and expulsion of a dead fetus. After this pregnancy she was in good health, without evidence of hypertension.

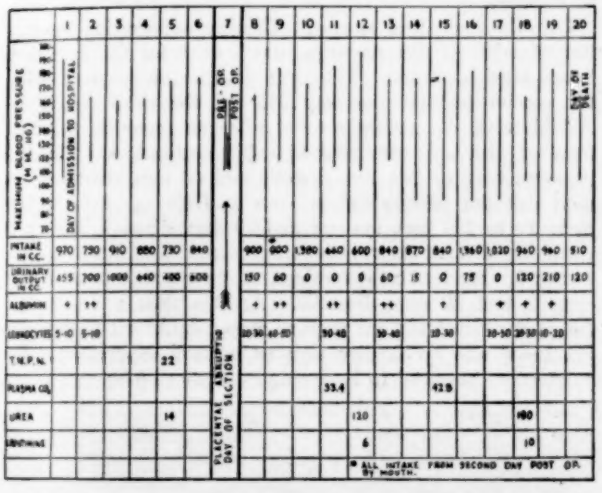

Fig. 1 (case 1).—Abruptio placentae with retroplacental hemorrhage showing urinary suppression, leukocytes in urine and elevation of blood urea and creatinine, with fatal termination.

The patient again became pregnant; her last menstrual period was July 6, 1942 and her calculated date of confinement was April 16, 1943. Pregnancy was normal until about two weeks before admission to the hospital, when hypertension, albuminuria and slight general edema developed. She was referred to a hospital in another city, remained there about one week and then was transferred to the Hahnemann Hospital.

Examination on admission showed that the patient was well nourished. She weighed 61 Kg. Moderate edema was present over the face, hands and feet. Oral hygiene was good, the thyroid was normal to palpation and the heart and lungs appeared normal to physical examination. Pregnancy had been present about twenty-eight weeks; the fetal heart beat was 152. The fetus was estimated to weigh about 900 Gm. The blood pressure was 170 mm. systolic and 118 mm. diastolic. Examination of the optic disks showed edema of the retina, with arteriovenous ratio of 2 to 3; pulsations of the arterial vessels were present, but there was no hemorrhage or exudate. Urinalysis of a catheterized specimen showed albuminuria 1 plus with granular casts 5 to 10 per high power field and 5 to 10 leukocytes per high power field, and the hemoglobin was 13.1 Gm., red blood cells numbered 4,000,000 and white blood cells numbered 9,800. The Wassermann and Kahn reactions were negative. The blood type was O. There was no nitrogen retention, the nonprotein nitrogen was 22 mg. per hundred cubic centimeters and uric acid was 5 mg. per hundred cubic centimeters. The provisional diagnosis was preeclampsia, probably with previous arterial damage. The classic signs of hypertension, albuminuria and edema were present. The Rh factor was not determined.

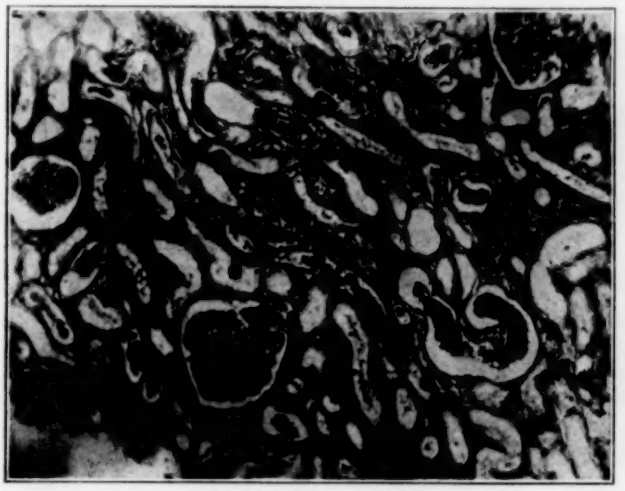

Fig. 2 (case 1).—Section of kidney showing obstructed tubules and normal glomeruli. Stained with hematoxylin and eosin; slightly reduced from a photomicrograph with a magnification of 80 diameters.

With the hope of obtaining a viable child, the patient was treated conservatively with a salt free, high protein diet and diminished fluid intake (between 700 and 900 cc. in twenty-four hours). She was given 0.3 cc. of a liquid preparation of veratrum viride orally every hour for forty-eight hours, then 0.2 cc. every eight hours. Because of restlessness, chloral hydrate was given twice in seven days, 2 Gm. per dose. On this schedule the blood pressure dropped to 150 mm. systolic and 70 mm. diastolic, but the albuminuria persisted although there was no further evidence of casts.

Six days after admission premature separation of the placenta, concealed type, developed suddenly, with slight external bleeding and absent fetal heart sounds. A low, classic cesarean section was performed promptly under cyclopropane-oxygen anesthesia and a transfusion of 500 cc. of citrated blood was given. At operation a retroplacental hematoma of about 250 cc. was found, with considerable infiltration of blood into the uterine wall.

Fig. 3 (case 1).—Section of kidney showing normal glomeruli. Stained with hematoxylin and eosin; slightly reduced from a photomicrograph with a magnification of 350 diameters.

10. Eggleton, M. G.; Richardson, K. C.; Schild, O., and Winton, F. R.: Quart. J. Exper. Physiol. **32**: 89, 1943.

The baby, a premature infant of about thirty weeks, was stillborn. There was no evidence of shock.

From the time of the placental separation urinary suppression developed; the urinary output was 150 cc. on the first postoperative day, 60 cc. the second day and then none at all. The anuria persisted, with increasing edema and anemia. On the

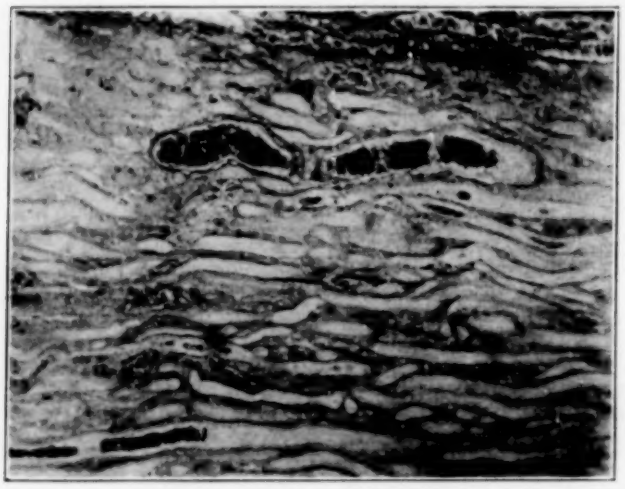

Fig. 4 (case 1).—Section of kidney showing characteristic obstruction of the collecting tubules by blood cells and débris. Stained with hematoxylin and eosin; slightly reduced from a photomicrograph with a magnification of 80 diameters.

second postoperative day a consultation was held with Dr. Garth Boericke of the medical staff, who drew attention to Young's [1] report of crush syndrome in cases of abruptio placentae and its similarity with this case.

The treatment during this period consisted in four transfusions of citrated blood, 500 cc. each, hypertonic glucose 50 cc. of a 50 per cent solution intravenously, Fisher's solution by rectal drip, two doses of 1,000 cc. each of potassium citrate and sodium bicarbonate by mouth. Urinalysis showed persistent albuminuria 1 plus without casts but with leukocytes and occasional erythrocytes. Increasing nitrogen retention was evident; the blood urea concentration was 180 mg. per hundred cubic centimeters and creatinine 10 mg. per hundred cubic centimeters on the tenth day after operation. On the eleventh postoperative day the patient voided 210 cc. of urine and began to show signs of improvement, but on the twelfth day she died suddenly with acute dyspnea.

Abstract of the autopsy findings was as follows: Generalized edema of the body tissues and serous cavities, including edema of lungs, bilateral hydrothorax, hydropericardium and hydroperitoneum. The characteristic liver findings of eclampsia were present, including widespread focal hemorrhagic necrosis. These areas of necrosis were not of recent occurrence but had been present several weeks, as shown by the reactive fibrosis around them. The kidneys were swollen and firm, weighing 285 and 290 Gm. respectively, and the cortex contained numerous punctate hemorrhages on section. Microscopic examination (figs. 2, 3 and 4) showed no glomerular damage but degeneration of the tubules with many hyaline and pigmented casts. Staining with prussian blue (fig. 5) demonstrated that the pigment was iron, confirming the hemorrhagic nature of the tubular casts.

CASE 2.—*Rupture of the uterus with extensive hemorrhage, with recovery.*

Mrs. R. B. (fig. 6), aged 25, a quadrigravida, was admitted to Broad Street Hospital on Aug. 2, 1942 at term, shortly after the membranes had ruptured. The baby was in breech presentation, right sacroanterior. Labor proceeded unsatisfactorily owing to primary inertia and considerable restlessness on the part of the patient. On the evening of August 3, twenty-nine hours after the onset of labor, she was seen in consultation by one of us, who found the cervix dilated only 2 cm. Sedation and rest were advised. She was given morphine 0.0016 Gm. (¼ grain) and scopolamine 0.1 mg. (1/150 grain), which produced excellent rest that night.

Eleven hours later labor started again and proceeded with fair pains for three hours, when she was given pitocin 0.15 cc. (2 minims) by hypodermic. This was followed by pains of increased severity, vaginal bleeding, rapid pulse (110) and drop in blood pressure to 90 mm. systolic and 60 mm. diastolic. A vaginal examination at this time showed considerable bleeding; the cervix was fully dilated. The consultant was called a second time. The patient was in moderate shock. She was anesthetized with open drop ether and a dead baby was delivered with little difficulty by prompt breech extraction. During delivery she received 1 unit (250 cc.) of blood plasma and an infusion of 5 per cent glucose in saline solution. Immediately following delivery the placenta was delivered manually and the uterine cavity explored for evidence of ruptured uterus.

A large tear was found, 15 cm. long, extending from the external os on the right up into the fundus. The uterus was quickly packed and the patient taken to the operating room, where a supravaginal hysterectomy was performed while a transfusion of 500 cc. of citrated blood was given.

When the abdomen was opened the uterine tear was found to extend out the right broad ligament to the external iliac artery. There was approximately 300 cc. of free blood in the peritoneal cavity and a great area of extravasation throughout the broad ligament. After hysterectomy, 9 Gm. of sulfanilamide was placed on the cervical stump and the patient was returned to bed in serious shock. She received a second transfusion and 1,500 cc. of 5 per cent glucose in saline solution by infusion.

Convalescence was stormy. Urinary suppression developed immediately, so that no urine was voided for the first twelve hours after operation. The next day the output was 105 cc., the second postoperative day 315 cc., the third day 900 cc. At this time the patient showed nitrogen retention with blood urea of 31.5 mg. per hundred cubic centimeters. The blood pressure rose to 120 mm. systolic and 68 mm. diastolic. The next day the urinary output rose to 1,830 cc. and the blood pressure to 136 mm. systolic and 70 mm. diastolic, but on the sixth day distinct improvement appeared. The blood urea was 14 mg. per hundred cubic centimeters, the blood pressure 130 mm. systolic and 80 mm. diastolic. At this time a vesicovaginal fistula developed and the urinary output could not be measured, but there was no further sign of urinary suppression. Convalescence continued to be stormy, complicated by sepsis, infec-

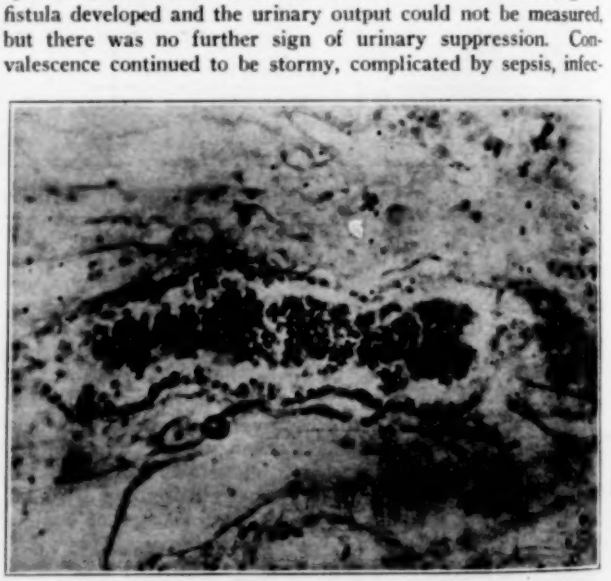

Fig. 5 (case 1).—Section of kidney showing characteristic obstruction of collecting tubule by blood cells and débris. Stained with prussian blue to show presence of iron, thus proving that the obstructing débris contains blood pigment; slightly reduced from a photomicrograph with a magnification of 350 diameters.

tion of the urinary tract and, later, secondary bleeding from the fistula.

In all, the patient received seven transfusions of citrated blood, of which five were given during the first three postoperative days. Aminophylline 0.2 Gm. one dose on the third day, and sulfadiazine for five days beginning on the sixth

postoperative day, were administered. The patient was discharged on the forty-second day after operation in fairly good condition except for moderate secondary anemia and the vesicovaginal fistula, which was still present.

One year later the patient returned to the hospital and the fistula was closed by vaginal operation. At that time she was in excellent condition. A later test showed her to be Rh positive.

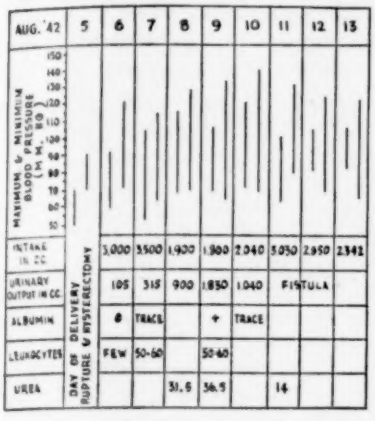

Fig. 6 (case 2).—Rupture of uterus with extensive bloody extravasation, showing urinary suppression, leukocytes in urine and elevation of blood urea followed by recovery. Antepartum blood pressure was normal.

CASE 3.—*Twisted ovarian cyst, with urinary suppression.*

Miss R. Z., white, aged 22, who was admitted to St. Luke's and Children's Medical Center on Aug. 8, 1943, gave an essentially negative past history. The menstrual periods were regular and normal. The last menstrual period was August 1 to 6 inclusive.

On August 3, the third day of her menstrual period, she suddenly was seized with sharp abdominal pain, vomiting and later fever. The pain was most intense in the upper left quadrant. Immediately total urinary suppression appeared, which continued during the four days she remained at home. There were no signs of shock at any time. She was sent to the hospital with a diagnosis of left renal calculus producing ureteral obstruction and reflex anuria of the opposite kidney.

On admission to the genitourinary service the patient's temperature was 100 F., pulse rate 100 and respiratory rate 24. She appeared to be acutely ill and in pain. Examination of the abdomen revealed generalized tenderness and rebound pain. No peristalsis was heard. There was resistance to palpation in the left upper quadrant of the abdomen. Blood examination revealed hemoglobin 11.1 Gm., red blood cells 4,130,000 and white blood cells 15,800. Sedimentation rate was 38 mm. per hour, blood sugar 128 mg. per hundred cubic centimeters, urea nitrogen 14.0 mg. per hundred cubic centimeters and creatinine 1.0 mg. per hundred cubic centimeters. The Wassermann and Kahn reactions were negative. The blood Rh was positive. Cystoscopy revealed that the bladder mucosa was normal. A number 5 catheter was passed into the left renal pelvis without meeting any obstruction, and 120 cc. of brownish red, cloudy urine was removed from the bladder. This contained a cloud of albumin and numerous red blood cells. One cc. of urine was obtained from the left renal pelvis. Pelvic examination revealed that the external genitalia and perineum were normal. Although the bimanual examination was unsatisfactory because of pain and abdominal distention, the uterus was found to be small and freely movable and the cervix normal. There was no evidence of fluid in the posterior cul-de-sac. Both adnexal regions were tender, and no masses were palpable.

The patient was treated conservatively with intravenous fluids, oral Wangensteen suction and sedation. In the first twenty-four hours after admission only 60 cc. of blood-tinged urine was obtained. Thirty-six hours after admission 480 cc. of urine was obtained. Following this the urinary output returned to normal. Roentgenographic examination of the colon on August 13, with contrast enema, showed no structural or pathologic changes within the colon and no displacement of the colon. There was a shadow of a large tumefaction on the left side, which reached as high as the transverse process of the first lumbar vertebra. This shadow appeared to arise from below upward and suggested a cyst or other pelvic tumor.

The patient's general condition improved. For the first five days after admission the temperature fluctuated between 98.2 and 102.2 F. and gradually subsided to a range between 98.2 and 100 F. On August 29, or the twentieth day after admission, laparotomy was performed. A large left ovarian cyst was found, twisted on its pedicle three times, with hemorrhagic infiltration into the cyst wall (fig. 7) and hemorrhage into the cyst cavity. The omentum and intestines were adherent to it. The pedicle was ligated and the cyst removed. Pathologic examination showed a nonpapillary serous cystadenoma with early gangrene, blood infiltration of the wall and bleeding into the cyst.

COMMENT

In a consideration of the relationship of our cases to the studies of previous investigators, Young's [1] theory seems to offer the best explanation of the mechanism of the urinary suppression.

The one common factor in all 3 cases was extravasation and infiltration of blood into body tissue. That the tissue does not have to be muscle tissue is shown by the case of twisted ovarian cyst in which the bloody infiltration occurred only in the cyst wall and cavity. It is possible that the infiltration of blood into any type of cellular tissue may release toxic substances, causing the typical kidney reaction, and thus the syndrome may be found in other hemorrhagic conditions. Extensive bloody infiltration seems to be a more important factor than shock in 2 of our cases; the patient with the twisted ovarian cyst and the one with placental separation showed little or no evidence of shock. The role played by the Rh factor in this condition is unknown. In these cases it did not seem to be a factor. The 2 patients who survived were Rh positive. The factor was undetermined in the fatal case. It seems logical that the Rh factor should have no effect on the prognosis except in cases in which multiple transfusions are necessary.

It is possible that the underlying toxemia, with its antepartum renal damage, was a contributory factor in the fatal termination of the case of placental separation. It is important to note, however, that in this case the areas of hemorrhagic liver necrosis were not extensive and that regeneration had started before death occurred.

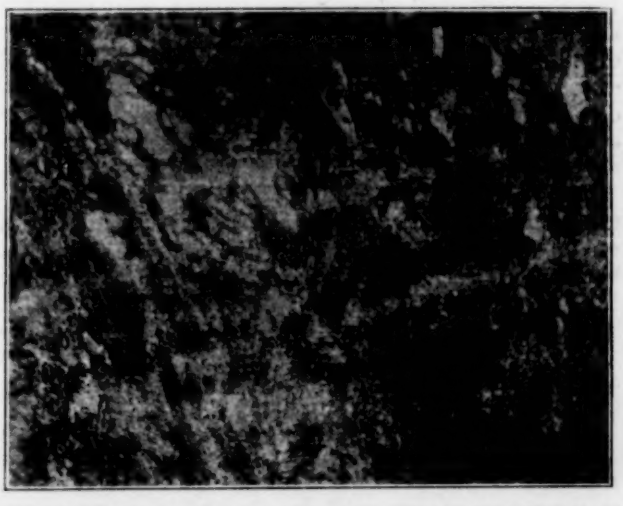

Fig. 7 (case 3).—Section of ovarian cyst wall, showing infiltration of red cells and leukocytes. Stained with hematoxylin and eosin; slightly reduced from a photomicrograph with a magnification of 80 diameters.

The ruptured uterus is an excellent example of birth trauma as a cause of urinary suppression, and it is likely that other cases of dystocia and extensive surgical procedure will show crush syndrome if the physician is on the alert for its signs.

SUMMARY

Three cases of crush syndrome with urinary suppression were all of different origin: 1 case of placental separation with retroplacental hematoma, 1 case of ruptured uterus and a third case of hemorrhagic twisted ovarian cyst.

The 3 cases have in common the one factor of extensive hemorrhagic infiltration into body tissue. Two patients showed little or no evidence of shock and 1 severe shock, although this patient recovered. Apparently shock is not the important causative factor. Young's [1] theory of release of unknown toxic substances seems to offer a better explanation.

Urinary suppression may follow dystocia and birth trauma more often than is ordinarily suspected and may explain some hitherto obscure obstetric fatalities.

The same syndrome may be present in other cases of twisted ovarian cysts and is worthy of further study.

A CLINICAL SYNDROME FOLLOWING EXPOSURE TO ATOMIC BOMB EXPLOSIONS

COLONEL PAUL D. KELLER
Medical Corps, Army of the United States

The information presented in this report was obtained from studies on 21 patients who were admitted to the Osaka University Hospital in late August and early September 1945 suffering from an alarming malady designated atomic bomb disease by the Japanese. I observed, examined and followed approximately half of the patients, while information on the remaining patients was taken from the hospital records. The patients selected for presentation do not include those receiving severe blast injuries or extensive external burns at the time of the explosion. Included are patients who received minor or no injuries or burns during those catastrophic days at Hiroshima and Nagasaki but who subsequently developed severe clinical manifestations, which in 5 instances resulted in death. Seventeen of the patients herein presented experienced the atomic bombing at Hiroshima, Japan, on August 6, 1945, while the remaining 4 were victims of the Nagasaki explosion on Aug. 9, 1945. The average age incidence is 30, with extremes of 20 and 52. Three are women, while the other 18 are men. It is to be remembered that these people were not hospitalized until on an average of one month after their atomic bomb experience. The average day of death for the 5 fatal cases was twenty-six days after the bombing. Those who survived required long periods of hospitalization before their recovery was sufficient to warrant a hospital discharge.

CLINICAL HISTORY

The environmental location of each victim at the time the atomic bomb exploded and their relationship to the center of the explosion is especially interesting. The variation in distance among cases ranged from 50 to 4,000 meters. Seventeen of 21 patients were in buildings at the time the bomb exploded. Fourteen of these 17 patients were in wooden buildings, while the other 2 were in concrete buildings. Table 1 summarizes the variations in distance and the location of victims in reference to the type of building or other location.

Only 5 patients recalled experiencing a definite concussion wave at the time of the atomic bomb explosion. One of the 5 who was in a wooden building about 50 meters from the center of the explosion was thrown 12 feet by the blast as the building collapsed. The 2 victims who were outdoors had contrasting experience in that 1 was knocked unconscious while the other 1 felt no blast.

TABLE 1.—*Location of Victims*

Distance in Meters	Number of Patients	Patients in Wooden Buildings	Patients in Concrete Buildings	Patients Outdoors	Location Unknown
0 to 50	4	4	0	0	..
200 to 300	3	1	1	0	1
500	4	3	1	0	..
1,200	1	1	0	0	..
1,500	1	1	0	0	..
2,000	2	2	0	0	..
4,000	1	1	0	0	..
Unknown	5	1	1	2	1
Total	21	14	3	2	2

Three patients recall hearing a noise "like the sound of an explosion." One described a noise that sounded "like a falling bomb," and 2 said the noise they heard at the time of the atomic bomb explosion was a sound "like rain." Two stated that they heard no definite sound of an explosion, while the remaining 13 were uncertain.

Nine patients were conscious of a "flash of light" when the bomb exploded. One of the 9 described the light as being green. Three of the remaining 12 patients experienced no sensation of light, while the other 9 case records do not specify one way or the other.

TABLE 2.—*Onset of Symptoms*

Case No.	Anorexia	Onset in Days After Bombing	Nausea	Onset in Days After Bombing	Vomiting	Onset in Days After Bombing
1	Present	?	Present	Fourth day	Many times	Fourth day
2	Present	First day	Present	30 minutes	Severe	30 minutes
3	Not known					
4	Accentuated	First day	Accentuated	Immediate	Five times	Immediate
5	None	.....	None	.....	None	
6	Present	First day	Mild	First day	None	
7	Present	?	None	.....	None	
8	Not known					
9	Present	First day	Present	First day	Present	First day
10	Present	Second day	Present	Second day	Once	Second day
11	None	.....	None	.....	None	
12	Mild	?	None	.....	None	
13	None	.....	None	.....	None	
14	None	.....	None	.....	None	
15	None	.....	Slight	First day	Once	First day
16	None	.....	None	.....	None	
17	None	.....	None	.....	None	
18	Present	?	None	.....	None	
19	Present	Fifth day	None	.....	None	
20	Present	First day	Present	First day	Present	Second day
21	Present	First day	None	.....	None	

All patients but 4 incurred minor wounds (13 patients) or burns (4 patients) at the time of the explosion. These wounds resulted from flying splinters, glass and other débris or resulted from falls by the patients, and were in the form of abrasions, contu-

sions and lacerations. With 2 exceptions these lesions were healed prior to the time the patient applied for admission to Osaka University Hospital.

Anorexia, nausea and vomiting of varying severity and length of duration were a common early symptom. The onset of these symptoms occurred within the first five days after the explosion. Data relative to these symptoms is presented in table 2.

Twelve patients gave a history of having a fever or feeling feverish prior to the time they were admitted to the hospital. Four patients did not know and a single patient stated that he had not experienced a rise of temperature before his admission to the hospital. No data in reference to fever were available on 3 patients. The onset of the fever ranged from two to twenty-five days after the explosion. The intensity of the fever varied from slight to high.

Unusual and in several instances considerable loss of hair from the scalp was experienced by 13 of 21 patients. One person definitely did not lose unusual amounts of hair during the course of his illness. The records on the remaining patients do not contain information relative to the loss of hair. The onset of epilation varied from seven days to twenty-one after exposure to the atomic bomb explosion, with an average date of onset of eighteen. A few persons noted swelling of the hair roots a day or two before they noticed the beginning of hair loss. None of the twenty-one patients noticed unusual loss of hair from the axillas or pubis, but 1 had loss of hair from the eyebrows and another from the beard.

Nine patients exhibited hemorrhagic manifestations prior to their admission to the hospital. All 9 noticed this occurrence shortly before admission on an average of twenty-five days after the bombing. In 2 it occurred after admission to the hospital. Thus a total of 11 patients displayed unusual hemorrhagic tendencies during the course of their illness. Bleeding gums was the most common manifestation (6 cases), subcutaneous bleeding next (3 cases), nose bleed and tonsillar bleeding last.

Fatigability was almost a universal complaint, which was mild as a rule following the bombing but increased in severity to become actual weakness in most patients by the time they were admitted to the hospital.

Two patients developed diarrhea, 1 on the fourth day after the bombing and the other on the ninth day. This disturbance was transient in both. The other patients showed no significant change in bowel habit.

Other symptoms complained of by single patients were faintness, tightness in the chest, dizziness, difficulty in swallowing and unusual thirst.

RESULTS OF PHYSICAL EXAMINATION

Fever and a corresponding rise in the pulse rate are the most common and prominent findings on physical examination. Ten patients had an elevated temperature at the time of admission and all the remaining patients manifested elevations in temperature during their period of hospitalization. The temperature ranged between 37 and 40 C. (98.6 to 104 F.) with occasional recordings slightly above 40.

Hemorrhagic manifestations were found on admission or developed soon thereafter in the form of bleeding gums, petechiae, ecchymoses and nosebleed in 12 of these cases. Four of the 5 fatal cases exhibited purpuric tendencies.

Epilation of the scalp was detectable in 13 victims. The loss of hair was diffuse. In a few cases it was almost complete, while in other cases it was hardly detectable yet definitely abnormal.

Unilateral slight enlargement of the cervical lymph nodes was palpable on 4 patients, of whom 3 had tender nodes.

Areas of edema involving the lips, face and eyelids were noted on 2 patients at the time of their admission to the hospital.

TABLE 3.—*Blood Counts*

Case No.	Date	Red Blood Cells, Thousands	Hemoglobin	White Blood Cells	Polymorphonuclears	Lymphocytes	Eosinophils	Basophils	Mononuclears
1	?	3,500	90%	150	..	..	..	..	..
2	?	.....	53%	...	..	..	..	..	..
3	?	3,700	67%	600	7	93	..	..	..
4	?	3,370	69%	470	..	..	..	..	..
5	Sept. 2	3,040	63%	2,700	..	..	..	..	..
	Sept. 4	2,400	....	5,000	..	..	..	..	..
	Sept. 7	2,180	....	7,500	..	..	..	..	..
6	Sept. 3	2,040	49%	600	..	..	..	..	..
	Sept. 13	.....	....	1,700	..	..	..	..	..
	Sept. 18	1,700	38%	6,900	..	..	..	..	..
7	Sept. 6	2,740	....	1,700	..	..	..	..	..
	Sept. 7	2,600	66%	1,650	..	..	..	..	..
	Sept. 10	1,780	38%	3,650	..	..	..	..	..
	Oct. 15	2,330	65%	7,800	..	..	..	..	..
8	Sept. 5	4,800	75%	.....	..	..	..	..	..
	Sept. 6	.....	....	3,900	..	..	..	..	..
	Sept. 8	.....	....	2,000	..	..	..	..	..
	Sept. 15	.....	....	2,900	..	..	..	..	..
	Sept. 25	3,800	73%	3,000	..	..	..	..	..
	Oct. 6	3,200	75%	7,000	..	..	..	..	..
	Oct. 20	4,200	95%	7,200	..	..	..	..	..
9	?	4,560	79%	1,900	..	..	..	..	..
	Sept. 16	4,000	77%	2,170	..	..	..	..	..
10	Sept. 1	4,430	....	2,175	..	..	..	..	..
	Sept. 8	3,320	60%	2,100	..	..	..	..	..
	Sept. 11	3,420	63%	1,900	..	..	..	..	..
	Oct. 10	3,280	53%	2,800	..	..	..	..	..
	Oct. 15	2,420	50%	4,900	..	..	..	..	..
11	Sept. 4	2,390	66%	2,800	..	..	..	..	..
	Sept. 11	2,860	65%	1,800	40	55	2	0	3
	Sept. 28	2,860	75%	6,300	31	61	3	..	5
12	Sept. 6	3,500	70%	3,000	61	32	..	..	7
	Sept. 10	3,400	66%	2,700	..	..	..	..	..
	Sept. 13	3,600	67%	2,600	..	..	..	..	..
13	?	4,120	75%	3,200	..	..	..	..	..
	Sept. 10	4,200	80%	3,500	..	..	..	..	..
	Sept. 17	4,270	82%	3,400	..	..	..	..	..
14	Sept. 9	3,420	60%	2,700	..	..	..	..	..
	Sept. 11	3,150	55%	3,600	40	47	6	..	7
	Sept. 19	3,070	61%	2,800	35	62	3	..	2
15	Sept. 3	4,000	70%	3,800	55	35	1	..	9
	Sept. 14	.....	....	2,500	..	..	..	..	..
	Sept. 19	3,980	68%	2,700	58	37	..	..	5
16	Sept. 5	2,430	50%	3,200	..	..	..	..	..
	Sept. 19	2,400	55%	2,600	47	39	5	..	9
17	Sept. 10	3,100	67%	3,200	..	..	..	..	..
	Sept. 18	3,880	69%	3,800	72	23	..	..	5
18	Sept. 3	2,940	52%	925	56	12	1	..	31
	Sept. 10	3,010	60%	1,470	..	..	..	..	..
19	Sept. 7	2,670	60%	1,650	..	..	..	..	..
20	Sept. 7	3,250	60%	2,000	..	..	..	..	..
21	Sept. 10	4,200	95%	4,100	..	..	..	..	..

One patient who died presented jaundice terminally, while a second patient who recovered displayed a mild transient icterus.

Varying degrees of pallor was a physical finding in a small percentage of the cases.

Physical examination aside from fever, increased pulse and respiratory rates, purpuric tendencies, epilation, localized edema, cervical lymphadenopathy, jaundice and pallor was negative, including neurologic findings.

LABORATORY DATA

The laboratory studies that were done on these patients revealed evidence of profound pathologic changes. Abnormal white blood cell and white differential counts, red blood cell counts, hemoglobin determinations, sedimentation rates, amounts of plasma proteins and unusual bleeding times were consistently found. Significant abnormal changes in the urine also were observed.

Dramatically low leukocyte counts with pronounced granulocytopenia and in many cases a resultant relative lymphocytosis were the most spectacular findings. All cases reported showed the leukopenia, while in the few cases in which thrombocyte counts were made they were found to be low. Very low percentages of the granulocytic series of cells was found on 2 of the 5 patients who had sternal punctures and sternal marrow studies. Hypochromic microcytic and hypochromic normocytic anemia was a common but not constant laboratory finding. Table 3 gives most of the hematologic data on these Japanese bomb victims.

TABLE 4.—*Erythrocyte Sedimentation Rates*

Case No.	Date	Rate in Mm., First Hour	Rate in Mm., Second Hour
1	?	None	
2	?	125	148
3		None	
4		130	140
5		45	92
6		150	195
7	September 7	100	120
	September 10	87	117
8		None	
9		31	62
10	September 1	6	17
	September 11	40	80
	September 12	108	129
	September 15	75	110
11	?	75	112
	September 11	112	150
12	September 3	88	105
13	?	144	148
	September 10	130	135
	September 17	80	85
14	September 11	66	100
15	September 11	32	95
16	?	135	154
17	?	7	21
18	September 8	129	130
19	?	100	120
20	?	128	130

SEDIMENTATION RATES

The Westergren method for the determination of the sedimentation rate of red blood cells showed that the rate was exceedingly rapid both at one and two hour intervals. This determination is considered of great diagnostic and also prognostic importance in this malady. Table 4 gives the available data on sedimentation rates.

MISCELLANEOUS LABORATORY EXAMINATIONS

Bleeding times were determined on 9 patients and found to be abnormally prolonged in all 9. The average bleeding time by the Duke method was thirteen minutes. The clotting time, however, on the same 9 patients was within normal limits, averaging slightly more than three minutes. The direct van den Bergh test on the 7 blood samples from 7 separate patients was negative, while the indirect van den Bergh was positive on 6 of the same 7 patients. Studies on the fragility of the red blood cells of 8 patients showed no deviation from the normal.

Urinalysis on most patients disclosed positive findings of small amounts of albumin, with positive evidences of tyrosin in the urine of 3 patients. Abnormal amounts of urobilinogen in the urine were found in 9 of 11 patients. Urinalysis otherwise was negative.

Total protein determinations were done on a few patients after they had been in the hospital for a while, and in all there was a profound decrease in the total proteins, especially albumin, with a resultant reversal of the albumin-globulin ratio.

SUMMARY AND CONCLUSIONS

Twenty-one patients who developed a delayed illness following their exposure to atomic bomb explosions in Japan were studied. The data on these few patients seem to indicate that the possibilities of developing this syndrome is not significantly affected by distance from the center of the explosion as long as one is within a 2,000 meter radius. It is undoubtedly significant that only 1 patient is known to have been outdoors when the explosion occurred, and therefore people inside buildings were more apt to suffer from the delayed effects of atomic bombs provided they survived the initial effects. The delayed malady to some degree results from a generalized disturbance in human physiologic function, but the effects can be attributed principally to destruction or suppression of elements of the hemopoietic system (mainly granulocytes and thrombocytes) and to disturbance in liver function. The former effect produces a leukopenia (principally a granulocytopenia), thrombocytopenia, increased bleeding time and hemorrhagic tendencies with a resulting anemia, fever and weakness. The latter effect on the liver produces an albuminuria, tyrosinuria, hypoproteinemia, positive indirect van den Bergh reaction, jaundice and fever. The rapid sedimentation rate of erythrocytes gives evidence of extensive tissue destruction within the body. The similarity of this illness to that following excessive irradiation of the body with x-rays is striking.

600 South Kingshighway, St. Louis 10.

Modern Research.—The possibilities of research by simple means have largely disappeared. Expensive apparatus, great amounts of expendable material and proper assistance—secretarial and technical—are essential in modern research. What generous financial support does for an investigator is to increase and accelerate his output. If he has ample money to aid him he is not compelled to spend time in a shop making necessary apparatus but can order it made by skilful machinists; he is not required to undertake the labor of rearing and attending to animals for his studies but can buy the animals from reliable dealers or hire some one to breed them and give them proper care; he need not make charts, graphs and tables or prepare tracings and records for publication but can employ a draftsman to attend to these matters. Just so far as an investigator is freed from distracting attention to a variety of minor tasks which, though essential, are better performed by expert technicians in the several fields is he enabled to devote himself to his own special functions—keeping in touch with the moving frontier of knowledge, the newest literature, the latest discoveries; estimating the significance of fresh achievements in other places as related to his own current studies; and, by conferences with his fellow workers and by personal engagement in experiments, participating in the advances into new territory.—Cannon, Walter B.: The Way of an Investigator, New York, W. W. Norton & Co., Inc., 1945.

TYPHOID AND PARATYPHOID A IN IMMUNIZED MILITARY PERSONNEL

LIEUTENANT JEROME T. SYVERTON
COMMANDER RICHARD E. CHING
LIEUTENANT COMMANDER F. S. CHEEVER
Medical Corps, United States Naval Reserve
and
LIEUTENANT (jg) ANCIL B. SMITH
Hospital Corps, United States Navy

A clinical picture strongly suggestive of typhoid in a patient hospitalized because of suspected typhus led to bacteriologic and serologic studies that established the illness as paratyphoid A. This patient had become ill within four days of his arrival on Guam from Okinawa. When further inquiry revealed that other marines and soldiers, recently evacuated from Okinawa, were in four hospitals on Guam because of similar clinical findings, the obvious importance of learning whether these patients had typhoid or paratyphoid led us to undertake an investigation of this problem. Bacteriologic and serologic studies established typhoid or paratyphoid A as the diagnosis for 24 cases. Of these, 21 were paratyphoid A and 3 were typhoid.

It is our purpose in this paper to present certain clinical, bacteriologic, immunologic and epidemiologic data that relate to these 24 proved cases of typhoid or paratyphoid A in immunized military personnel.[1]

DATA RELATING TO THE PATIENTS

Of the 24 proved cases of typhoid or paratyphoid A, 16 were in marines and 8 were in soldiers. All 24 patients had been overseas for at least six months prior to the onset of illness, and all but 1, a marine, had been evacuated recently from Okinawa, a combat area. One explanation for the higher incidence in marines is that three of the four hospitals utilized on Guam to care for these patients were naval hospitals.

The age distribution in years was from 18 to 37. Eighteen patients were between 20 and 30 years of age, 4 were under 20 and 2 over 30. Twenty-three of the patients were white Americans and 1 patient (case 10) was an American Negro.

As these 24 patients were military personnel on duty in a forward area, there was little possibility that all indicated measures for immunization had not been effected. It seemed worth while, nevertheless, to check the most recent date of typhoid-paratyphoid immunization. Accordingly, the health records of 20 of the 24 patients were reviewed; the records of the other 4 were not available. The data on typhoid-paratyphoid immunization for the 20 men are presented in table 1. Nineteen of the 20 patients had received the full standard course of vaccination. One patient had on record only a single initial dose of 0.5 cc., but he had received a booster dose recently. Fifteen of the 20 men had been given one or more booster injections. The interval in months between the last dose of vaccine and the onset of illness is given for each case in table 2. This interval ranged from five to fifteen months. As the accepted expectancy for duration of immunity approximates twelve months, each of the 20 patients should have had some residual immunity at the onset of his illness. The possible influence exerted by this residual immunity on the patient's clinical course will be considered.

BACTERIOLOGIC STUDIES

Repeated attempts were made to recover the causative organism from each patient by culture of blood, stool and urine. Additional material for culture from 1 patient consisted of bone fragments removed from periostitic foci.

The technic of blood culture was modified from that routinely employed. This modification was effected because these patients, as members of the armed forces, presumably had received prophylactic inoculations of triple typhoid vaccine and therefore should react to infection with an immediate, specific, anamnestic response. It was assumed, therefore, that this early heightened response would result in humoral antibodies in sufficient quantity to make cultivation of the organism difficult. Accordingly from 10 to 20 cc. of whole blood was withdrawn and allowed to clot; the serum was saved for serologic study, and only the clot was used for culture. Each clot was divided into three portions for transfer to each of three tubes of medium, two of tryptose-phosphate broth containing 0.1 per cent agar and one of thioglycollate medium containing 0.1 per cent agar. The cultures were incubated at 37 C. for seven days or until growth was found by daily examination to be present.

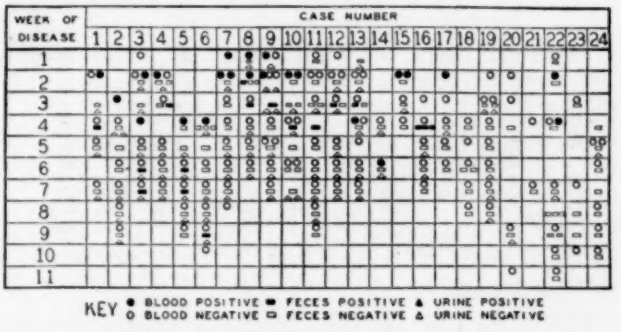

Chart 1.—Micro-organisms isolated by culture of blood, feces and urine.

Source material for fecal cultures was obtained by the rectal swab technic or from whole fecal specimens. This material was used for transfer to a Bacto-Shigella-Salmonella agar plate, which was inoculated comparatively heavily by means of a loop or cotton swab. Urine for culture was obtained by having the patient void into a sterile test tube (25 by 150 mm.). Five cc. of urine then was added to an equal amount of tryptose-phosphate broth, p_H 7.2, for incubation at 37 C. for from eighteen to twenty-four hours. When growth became apparent, a Bacto-Shigella-Salmonella agar plate was heavily inoculated by transfer of two or three loopfuls of the broth culture. After incubation at 37 C. for from eighteen to twenty-four hours the plates were inspected for colorless colonies. When such colonies were present, four to six were selected for transfer by streaking to separate MacConkey agar plates. This step was to determine the homogeneity of a colony. When, after incubation at 37 C. for from eighteen to twenty-four hours the resultant colonies were found to be "pure," transfer to agar slants with incubation at 37 C. for twenty-four hours was carried out. Then the growth on the slant was used as the source culture for determining the bio-

Because of lack of space this article has been abbreviated for publication in THE JOURNAL. The complete article appears in the authors' reprints.

From the United States Naval Medical Research Unit No. 2 (Lieutenant Syverton, Lieutenant Commander Cheever and Lieutenant [junior grade] Smith). From Fleet Hospital 115 (Commander Ching).

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Dr. Syverton is associate professor of bacteriology, Department of Bacteriology, University of Rochester School of Medicine, 260 Crittenden Boulevard, Rochester 7, N. Y. Dr. Ching is assistant professor of medicine, University of Tennessee School of Medicine, Memphis. Dr. Cheever is associate in bacteriology, Harvard Medical School, Boston.

1. The cooperation of Lieut. Col. G. G. Carter, M. C., A. U. S., Comdr. D. W. Marquis (MC), U.S.N.R., Comdr. S. M. Gardner (MC), U.S.N.R., Lieut. Comdr. H. B. Orenstein (MC), U.S.N.R., and Capt. I. W. Kramer, M. C., A. U. S., made it possible for us to assemble the data recorded in this study. Technical assistance was rendered by N. F. Hunt, PhM2c; A. J. Clemente, PhM1c; G. H. Freyvogel Jr., PhM1c; E. H. Josselyn, PhM2c; W. R. Hess, CPhM, and G. H. Vogt, CPhM.

chemical reaction of the organism. The carbohydrates used in fermentative tests were glucose, lactose, sucrose, mannitol, dulcitol and maltose. Incubation at 37 C. for thirty days was carried out in all fermentative tests. Growth in peptone medium was employed for tests to determine the production of hydrogen sulfide and indole. Motility was determined by inoculating semisolid medium (the semisolid medium utilized in this laboratory is a modification of that of Jordan, Caldwell and Reiter, as described by Edwards and Bruner [2]). Incubation was carried out at 37 C. for several days or until motility was apparent.

Species identification within the various genera was carried out by agglutination tests in which specific typing serums were used. The antigenic analysis of the Salmonella strains isolated was accomplished by means of the standard Salmonella typing serums prepared by Dr. P. R. Edwards of the Department of Animal Pathology, Kentucky Agricultural Experiment Station, University of Kentucky, for the National Research Council.

A specific diagnosis was established for 24 patients [3] with the clinical picture and physical findings of typhoid or paratyphoid A. The bacteriologic findings are summarized in chart 1. Success or failure of isolation of the causative organism is indicated according to the week of the disease. It can be seen that the etiologic agent was isolated from 19 patients; from the blood and feces of 8 patients, from the blood of 7, from the feces of 3 and from bone fragments of 1. This last case gave a history entirely compatible with typhoid complicated with periostitis of both tibias. The diagnosis in each of the remaining 5 cases was made by serologic tests.

SEROLOGIC STUDIES

As far as possible, weekly samples of serum were obtained from each patient for the determination of the antibody titer against Salmonella typhosa, Salmonella paratyphi A, Salmonella paratyphi B, Proteus OX_{19} and Proteus OX_K. The macroscopic (tube) agglutination test was used. Since standardized issue antigens were not available, we prepared our own. In the case of the Salmonella organisms several strains of each species and various methods of preparation were tried in an attempt to produce antigens of maximal agglutinability. Unfortunately, standardized "high titer" antiserums were not available for testing them.

TABLE 3.—*Reciprocal of the Agglutinin Titer for the H and O Antigens of S. Typhosa, S. Paratyphi A and S. Paratyphi B*

Antigen	Week of illness	Case 1						Case 2						Case 3						Case 4					
		2	4	5	7	8	9	4	6	7	8	9	10	11	1	4	5	6	7	1	2	3	5	6	7
OT		20	40	0	20	0	0	40	80	80	40	40	40	40	0	0	20	20	20	0	40	20	20	40	20
OA	Reciprocal	20	20	20	20	0	0	40	40	80	40	40	40	40	0	20	40	80	40	0	80	160	160	160	160
OB	of	0	20	20	0	0	0	0	0	0	0	0	0	0	0	20	20	0	20	0	0	80	160	160	80
HT	agglutinin	40	80	20	80	0	0	80	160	160	80	80	160	160	40	20	80	40	20	0	0	40	40	40	20
HA	titer	40	40	40	20	0	0	80	160	160	160	80	80	80	40	80	160	160	80	0	0	80	80	80	80
HB		0	0	40	0	0	0	0	20	20	0	0	0	0	20	40	20	20	20	0	0	80	40	80	80

Antigen	Week of illness	Case 5						Case 6							Case 7							Case 8					
		4	5	6	7	8	9	4	6	7	8	9	10	11	2	4	5	6	7	8	9	1	2	3	4	5	6
OT		20	40	20	0	20	20	40	40	20	20	20	20	20	80	160	80	80	80	80	40	40	40	20	40	40	20
OA	Reciprocal	20	40	40	20	40	20	20	40	20	40	20	0	0	160	320	320	160	80	160	80	160	160	40	160	80	40
OB	of	0	20	0	20	0	0	20	20	20	20	0	0	0	20	20	0	0	0	0	0	40	140	80	40	40	40
HT	agglutinin	80	160	80	40	160	80	80	160	80	80	40	40	80	160	320	320	160	160	160	80	160	60	80	640	160	320
HA	titer	40	80	160	80	80	80	40	80	80	160	160	160	160	160	320	640	320	160	160	160	640	640	640	1280	320	160
HB		0	20	0	0	20	0	20	40	20	40	20	40	20	40	40	40	0	20	0	40	40	40	160	160	80	80

Antigen	Week of illness	Case 9				Case 10			Case 11							Case 12						
		4	5	6	7	4	6	8	2	3	5	6	7	8	9	10	2	4	5	6	7	8	9
OT		80	80	40	40	80	80	40	20	40	40	80	20	20	40	20	40	80	80	160	80	40	40
OA	Reciprocal	320	160	320	80	40	80	40	40	80	80	40	40	40	20	20	80	160	80	160	160	40	40
OB	of	80	80	40	40	0	0	0	20	20	20	20	0	0	0	0	320	80	80	80	40	40	20
HT	agglutinin	160	80	80	160	320	320	160	160	160	160	160	160	80	80	80	80	160	80	320	160	160	160
HA	titer	640	640	640	320	160	160	160	1280	1280	640	640	640	640	160	320	80	320	160	320	320	160	160
HB		80	40	40	0	80	40	80	0	40	20	0	0	0	0	0	160	80	40	80	40	20	0

Antigen	Week of illness	Case 13					Case 14		Case 15			Case 16				Case 17				Case 18		
		1	3	4	6	7	4	6	3	4	5	5	6	7	8	4	5	6	7	6	7	10
OT		0	20	20	20	20	20	20	0	0	0	80	40	40	40	0	0	0	0	320	80	80
OA	Reciprocal	20	20	80	80	40	20	20	160	160	80	40	40	40	20	20	0	0	0	640	640	320
OB	of	0	0	0	0	0	0	0	20	20	20	0	0	0	0	0	0	0	0	320	160	160
HT	agglutinin	160	80	160	80	80	40	20	160	160	80	160	160	160	160	0	0	0	0	80	320	40
HA	titer	80	160	5120	2560	1280	40	40	1280	1280	1280	40	40	40	80	20	20	0	0	640	2560	640
HB		0	40	20	0	0	0	0	80	40	20	40	20	40	20	0	0	0	0	320	160	160

Antigen	Week of illness	Case 19					Case 20				Case 21		Case 22		Case 23			Case 24				
		4	5	6	7	8	2	9	11	13	6	7	6	10	11	6	10	12	5	7	8	9	11
OT		160	160	80	80	80	0	0	20	0	40	40	320	320	640	320	40	2560	160	320	320	320	160
OA	Reciprocal	160	160	160	160	160	40	0	0	0	160	160	80	160	320	80	40	0	80	80	80	40	160
OB	of	40	40	40	40	40	0	0	0	0	40	40	80	80	160	80	40	20	80	80	80	80	40
HT	agglutinin	320	160	640	80	160	20	40	20	40	160	320	640	5120	5120	1280	5120	1280	5120	5120	5120	5120	2560
HA	titer	640	640	640	640	640	160	5120	2560	2560	2560	5120	80	80	320	80	40	20	80	80	80	160	80
HB		80	40	40	40	20	0	320	320	160	40	40	80	80	320	40	40	20	80	80	80	160	40

* OT = O antigen, S. typhosa; HT = H antigen, S. typhosa; OA = O antigen, S. paratyphi A; HA = H antigen, S. paratyphi A; OB = O antigen, S. paratyphi B; HB = H antigen, S. paratyphi B

The results of the Widal tests are given in table 3. Each patient's immunologic response undoubtedly was altered by the residual relative immunity present at the onset of his disease. Moreover, the picture is incomplete in some cases because serum specimens withdrawn early in the illness were not available or because the agglutinative tests were carried out in other laboratories.

In the 3 cases of typhoid (in 2 of which the diagnosis was established by the isolation of S. typhosa) the Widal reactions were quite typical. In 21 cases of paratyphoid A the Widal reactions were diagnostic in 12 (S. paratyphi A was recovered from either the

2. Edwards, P. R., and Bruner, D. W.: Serological Identification of Salmonella Cultures, Circular 54, Kentucky Agricultural Experiment Station, December 1942.

3. Through the technical assistance of the pharmacists mates named in footnote 1.

blood or the stool or both of 5). In the remaining 9 cases the agglutination tests were atypical and the diagnosis was established by the isolation of S. paratyphi A from the blood or stool or both in each case. Thus, had the laboratory diagnosis been based on serologic results alone nearly half the cases of paratyphoid A would have been missed.

In these 9 cases the agglutinin titers against the homologous H and O antigens were not significantly higher than those against at least one of the corresponding heterologous ones. In several instances they were actually lower. In 3 of these cases the highest agglutinin titer recorded against either homologous antigen (H or O) was 1:40, and in a fourth case it was 1:80. None of these cases showed the typical anamnestic reaction one would expect in a person who had been immunized against the disease relatively recently. As in the other cases of the series, the H agglutinin titers were usually higher than for the corresponding O.

Agglutination tests were set up against Proteus OX_{19} and OX_k but in no case were these organisms agglutinated to a significant titer.

CLINICAL PICTURE AND COURSE

Even though the clinical and pathologic manifestations of typhoid or paratyphoid A are sufficiently protean to make difficult a comparison of the disease in vaccinated and nonvaccinated human hosts, the size and homogeneity of the group of cases under study make worth while a description of our findings. It was expected that the relative immunity present in each host as the result of artificial active immunization would alter measurably the clinical picture as observed for the group.

Typhoid and paratyphoid A may closely simulate each other. More commonly, however, the clinical and pathologic manifestations in paratyphoid A are neither as severe nor of as long duration as in typhoid. Unlike S. paratyphi B, S. paratyphi A rarely causes the type of infection classified clinically as "food infection" or "food poisoning." In the present series of cases there was little to distinguish the cases of typhoid and paratyphoid A on clinical grounds alone.

INCUBATION PERIOD

The incubation period of typhoid or paratyphoid A is variable, ranging from five to forty days; but more usually it is from ten to fourteen days. In the present series of cases, departure of the patient from Okinawa presumably cut off any further contact with the infectious agent. It would seem, therefore, that an indication of the probable incubation period of typhoid or paratyphoid A in vaccinated persons could be gained by learning the interval in days between arrival on Guam and onset of disease. Inquiry, however, revealed that the date of onset of disease varied from twenty-nine days after arrival on Guam to forty-one days before leaving Okinawa for patients who were evacuated because of their illness. As these 24 patients were brought from Okinawa to Guam in sixteen different carriers (eight ships and eight planes) there is little possibility that the transport or conditions en route were factors.

CLINICAL FINDINGS AT ONSET

The onset of illness was fixed as the day of appearance of fever, although indefinite prodromal symptoms had been present in some cases. The onset of illness in 23 of the 24 patients took place prior to admission to the hospital. These data are presented in table 4. The number of days of illness before admission ranged from 0 to 21 and averaged 5.6. The onset of illness in 11 was abrupt; in 13 it was gradual. Table 5 summarizes their presenting symptoms. It will be noted that their symptoms were in common with those that occur in many acute febrile infectious diseases. In 4 of the cases with gradual onset, chills occurred within from one to four days after admission to the hospital to initiate severe clinical symptoms essentially similar to those observed in the cases with abrupt onset.

Abdominal pain and diarrhea at onset were indefinite in nature. The liquid stools in no instance contained blood or excessive mucus. It is of interest that 9 patients [4] (37 per cent) had diarrhea of variable severity within twenty-one days prior to the onset of their acute illness. Since, however, diarrhea was common among combat troops on Okinawa and the diarrhea of the patients under study was not sufficiently outstanding in character or severity for the patient to be selected during that twenty-one day period for special studies, the relationship of the preceding diarrhea to the specific disease subsequently proved to be typhoid or paratyphoid A could not be determined. That more than infection by Salmonella may have been present was shown when attempts to recover intestinal pathogens from feces resulted in the isolation of dysentery bacilli from 2 patients. Patient 8 yielded Shigella ceylonensis and patient 5 Shigella flexneri IX. In addition, a third patient (16) with proved paratyphoid A, one who had diarrhea and severe right upper quadrant abdominal pain on admission, yielded on sigmoidoscopy vegetative forms of Endameba histolytica. Obviously these findings made it difficult to interpret the significance of diarrhea, whether preceding or accompanying the patient's illness.

Headache was complained of by 14 patients at the time of admission and is discussed in detail with the other central nervous system manifestations.

Generalized aching is recorded as being present at onset for only 4 patients. It is probable that this figure is not correct, for specific complaints such as headache, weakness, chills and diarrhea undoubtedly dominated the picture in many cases, and particularly in those with sudden onset.

TABLE 4.—*Duration of Symptoms Before Hospitalization*

Disease	Paratyphoid A																				Typhoid		
Case number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Duration in days	5	16	5	7	10	20	5	4	2	6	2	4	2	1	7	21	10	15	4	5	2	0	6	7
Average number of days from onset of illness until patient was hospitalized (for 24 cases of typhoid or paratyphoid A)	6.5																							

4. Cases referred to in the text are indicated by number. It is to be kept in mind that a diagnosis of paratyphoid A was established for cases 1 through 21 and a diagnosis of typhoid for cases 22 through 24.

That the presenting symptoms did not tend to limit the diagnosis to a single disease is apparent from the wide variety of admission diagnoses, as shown in table 6.

TABLE 6.—*Admission Diagnoses*

Disease	Number of Patients
Malaria	6
Catarrhal fever, acute	3
Gastroenteritis, acute	3
Diagnosis unknown; medical observation	3
Diagnosis unknown, fever, cause undetermined	4
Rickettsial disease	1
Nasopharyngitis, acute, catarrhal	1
Appendicitis, acute	1
Dysentery, type undetermined	1

CLINICAL DISEASE

Study of the symptoms and signs that occurred during the course of each patient's illness gives a composite picture of typhoid or paratyphoid A as it affects immunized personnel. The manifestations for each of 24 patients are presented in table 7. It will be noted that the findings for each case are consistent with those of typhoid or paratyphoid A in a nonvaccinated population. However, the signs and symptoms of illness in the present series of cases were, perhaps, less severe and more variable than those that occur in the natural disease. Individual cases ranged from a mild febrile illness of a few days duration to a severe toxic and debilitating malady that resulted in fever for as many as sixty-four consecutive days and required hospitalization for eighty-eight days before evacuation could be effected.

Table 8 shows the number of days of hospitalization required by each patient, and table 9 shows the disposition of each patient on his discharge from the hospital on Guam.

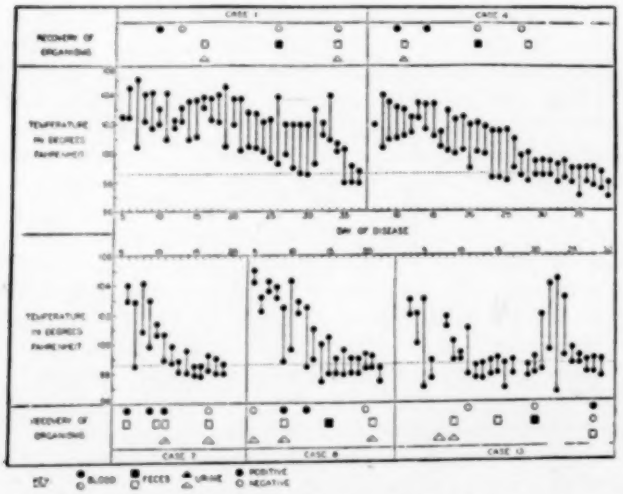


Chart 2.—Five fever charts that illustrate the diversity of temperature response in paratyphoid A, and the relation of fever to recovery of the causative agent from blood and feces.

Fever was the outstanding single manifestation of systemic involvement in this series of cases. Present from the onset of illness in all patients, fever persisted in many for days after subjective recovery. Attempts to classify the febrile reactions that were observed for each of these 24 cases brought out the total irregularity of febrile response. To illustrate the variations observed in the febrile response of patients to the same infectious disease, the temperature curves of 5 patients are reproduced in chart 2. These temperature charts represent 5 cases of paratyphoid A admitted to one hospital. The progressive stair-step rise in fever, said to be characteristically present but infrequently observed in typhoid, occurred in but 2 cases, 1 of paratyphoid A (case 5) and 1 of typhoid (case 22). The febrile reaction at the onset of disease for the remaining cases ranged from an immediate high, sustained fever with a diurnal variation of less than 2 degrees to a septic type of curve with wide diurnal variation. Major fluctuations in temperature were accompanied by chills or chilly sensations. The height of the fever curve usually was reached in the first or second week.

The maximal temperature achieved by each patient ranged from 102.2 F. to 105.6 F. The temperature in 8 cases exceeded 105 F.; in 22 cases, 104 F. The duration of fever (99 F. or higher by mouth) for each case is given in table 10; the range was from thirteen to sixty-four consecutive days. The average duration of fever for 21 cases of paratyphoid A was thirty-three days, as compared with fifty-three days for the 3 cases of typhoid. Septic curves continued into the second week for 6 cases but disappeared thereafter except for 2 cases. In 1 patient (13) with paratyphoid A a twelve day fever free period was succeeded by return of symptoms with chills and a high septic type of febrile reaction for several days and then by progressive recovery. The other patient (20) was acutely ill for ten days, following which he was subjectively well except for a septic type of fever curve that persisted for about forty days. The longest continuous fever without remission to normal was twenty-four days. Fever in 2 cases (7 and 9) fell abruptly to normal and remained there, whereas the temperature in all other cases became remittent with a progressive daily decrease in the height and duration of fever. Only 1 patient (17) had a low grade fever throughout his illness.

With very few exceptions the severity of symptoms and toxic manifestations could be estimated by the height of fever and, moreover, the fever curve reflected the patient's physical status. Thus the patients seriously ill were limited to those with high fevers. In fact, 3 of the most seriously ill patients had high fevers of short duration: patient 7, nine days; patient 9, sixteen days; patient 8, twenty-one days.

The cardiac rate was noticeably affected in each case, as evidenced by a discordance between pulse and temperature. A relative bradycardia became apparent in the first few days of illness to continue for several weeks. This was most apparent when a fever of 102 F. or over was reached, irrespective of the type of temperature curve. It was exceptional for the cardiac rate to exceed 100. Once the fastigium was passed and the patient began to show improvement, an increase in cardiac rate took place to reach during convalescence a relative tachycardia. Minor exertion resulted in elevations to 120 or more. Moreover, varying degrees of neurocirculatory asthenia were common and in 3 patients was so profound as to bring about their evacuation. Postinfectious bradycardia was not observed. It is of interest that 1 patient (22) at the height of his disease changed abruptly from a bradycardia to a sinus tachycardia at a time when he showed evidence of peripheral vascular failure.

One or more manifestations of cerebral involvement was present in all but 1 case. Headache was present almost continuously in 19 cases from the onset of illness until the fastigium was reached. Thereafter it was present intermittently, to disappear about the time

of defervescence of fever. The headache was usually generalized but varied as to localization and severity. Temporary relief from headache for 1 patient was not obtained until his increased intracranial pressure had been relieved by the withdrawal of cerebrospinal fluid. Further evidence of cerebral involvement was the occurrence of listlessness, somnolence, stupor and delirium. Especial care was taken in the separation and tabulation of these manifestations, for each represents a gradation in extent and severity of cerebral involvement. Listlessness usually merged into somnolence. Stupor and delirium were present in the most severely ill patients. Retrobulbar pain was surprisingly common. It was present in more than a third of the patients and in 1 was the outstanding symptom. Subsultus tendinum was not observed. Four patients (2, 7, 8 and 9) presented findings suggestive of encephalitis. These patients were ataxic and showed confusion and disorientation which merged into stupor and delirium. No signs of meningeal irritation were noted, and the eyegrounds appeared normal. Lumbar puncture performed on 3 of these patients revealed a normal spinal fluid in all, normal dynamics for 2 and a pressure elevated to 190 mm. of water for the third (patient 7).

Symptoms or signs of involvement of the gastrointestinal tract were prominent. Anorexia was present regularly at the height of fever. Nausea occurred in a third of the cases, nonprojectile vomiting in a third, abdominal pain in a half and diarrhea in a half. The abdominal pain was for the most part indefinite, crampy and nonlocalizing, irrespective of the presence of diarrhea. In only a single case did it persist or become sufficiently intense to simulate the pain of an acute abdominal condition. The exception was the patient (16) from whom vegetative forms of Endameba histolytica were recovered. Diarrhea of several days' duration was a prominent finding. It was present on admission in 8 cases, during the first week in 8 and during the second or third week in 5. Blood, excess mucus, severe cramps, tenesmus or the systemic effects of dehydration were not noted. Paregoric readily controlled the attacks. From the onset of decline in fever and throughout convalescence appetites varied from normal to ravenous. Weight that was lost was for the most part rapidly regained.

The spleen enlarged sufficiently to become palpable in 70 per cent of the cases. This enlargement became apparent in from seven to fourteen days after the onset of illness, when palpation revealed a soft, tender organ with a smooth, round border. Transitory hepatomegaly was noted in 2 cases. In 1 patient (22) it undoubtedly resulted from chronic passive congestion.

Bronchitis was present on admission in 4 patients and developed during the course of illness in another 4. The symptoms were mild and the physical findings transitory in 6 of these patients, all of whom had paratyphoid A. The patients had a cough for several days that was distressing at times and productive of a slight amount of mucoid material. Two of the patients had a few sibilant rales on each of two days. Two patients with typhoid, on the other hand, presented more definite and prolonged evidence of bronchitis. One man was admitted to the hospital with a clinical diagnosis of bronchopneumonia. Coryza, laryngitis and bronchitis were present. A rasping cough, intermittently productive of tenacious sputum, developed in the first week. A roentgenogram showed slight pneumonic infiltration at the costophrenic angle, but sputum studies and subsequent chest plates were negative. A course of sulfadiazine therapy was without apparent effect. The patient continued to cough for several weeks. The second case diagnosed clinically as bronchopneumonia developed in a typhoid patient at the height of his illness. As it was associated with vasomotor collapse and sinus arrhythmia, it might better be considered as a complication. Rapid, shallow respirations and coarse rales developed but were present for only three days. Chest plates were negative.

Weakness in many appeared early and became more evident as the disease progressed. Present in all,

TABLE 8.—*Length of Stay in Hospital*

Disease	Paratyphoid A																				Typhoid		
Case number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Days of hospitalization	72	54	45	49	56	70	52	41	52	43	64	66	39	50	45	42	67	60	53	88	58	75	84	71
Average number of days of hospitalization	56																					77		
	58																							

TABLE 9.—*Disposition of Patient on Discharge from Overseas Hospital*

	Case Number																								Total Number	Percental Number
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Evacuation for convalescence	..	+	..	..	..	+	+	..	..	..	+	+	+	+	..	..	..	+	..	+	+	+	+	+	13	54
Returned to active duty	+	..	+	+	+	..	..	+	+	+	..	..	..	..	+	+	+	..	+	..	..	..	..	..	11	46

TABLE 10.—*Duration of Fever*

Disease	Paratyphoid A																					Typhoid		
Case number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Duration in days	36	30	29	32	28	25	13	21	16	34	21	38	24	48	30	48	24	64	19	49	59	57	38	63
Average duration in days	33																					53		
	35																							

asthenia was profound in 50 per cent of the patients, as indicated in table 7.

Excessive perspiration followed chills and abrupt changes in body temperature. In addition, however, profuse sweating occurred toward the latter part of the illness when the maximal diurnal temperature rise remained low, and in convalescence. It was particularly pronounced in about a third of the patients, who had drenching sweats by day and night.

Exanthems appeared early in the disease as a discrete macular rash in about 25 per cent of the patients. It was found over the abdomen and chest, sometimes spreading to the axillas and upper part of the thighs. It faded on pressure, never was prominent and usually disappeared in from forty-eight to seventy-two hours.

The results of 94 leukocyte counts on 24 patients are summarized in table 11. Total cell counts were largely within normal limits. The highest (14,700) was recorded during the fourth week of illness and the lowest (3,100) during the second week. Several patients showed a mild leukopenia, and in 2 (2 and 24) a definite neutropenia was noted during the fourth week of illness. .

TABLE 11.—*Data on Leukocyte Counts*

	Average Leukocyte Count						
	On Admission	By Week					
		1	2	3	4	5	6
Total number of leukocytes..	6,927	6,577	6,082	5,400	6,615	7,066	7,900
Differential count expressed in percental numbers							
Neutrophils.....	63	64	64	59	56	51	53
Lymphocytes.....	33	32	32	33	40	46	44
Mononuclear leukocytes..	2	2	3	4	3	2	1
Eosinophils.....	2	2	1	4	1	1	2
Number of leukocyte counts used to compute averages..	24	18	19	13	10	6	4

DIFFERENTIAL DIAGNOSIS

The illness in each patient of the present series demonstrates the capacity of typhoid or paratyphoid A in vaccinated personnel to simulate during the early stages of the disease a wide variety of illnesses. The presenting symptoms of each case are listed in table 5. These symptoms, supplemented by the clinical appearance, history and physical findings for each patient, suggested to physicians stationed in four hospitals a wide variety of admission diagnoses. These are listed in table 6 according to case number. In no instance was the admission diagnosis that of typhoid or paratyphoid A. For the most part typhoid or paratyphoid A was not seriously considered until other possibilities had been eliminated. The diseases, in addition to those listed in table 6, that must be considered in differential diagnosis are brucellosis, dengue fever, miliary tuberculosis, bacterial endocarditis, meningitis, tuberculous peritonitis, Hodgkin's disease, trichinosis and other pyrogenic illnesses. Obviously it is only through persistent and intelligent utilization of laboratory facilities that a specific diagnosis can be made. A history of recent immunization with TAB vaccine offers little assurance that the disease is not typhoid or paratyphoid A. Previous immunization may make the diagnosis more difficult by modifying the presenting symptoms and course of the disease as well as by causing atypical Widal reactions.

COMPLICATIONS

Complications occurred in 5 cases. In case 23 acute periostitis and osteitis of the right tibia developed in the third week of illness, and of the left tibia in the fourth week. Both required surgical intervention. Bone fragments and exudate from each focus yielded S. typhosa. Both foci of infection failed to heal, there being a discharge of purulent exudate and sequestrums at intervals. The patient was evacuated for further hospitalization eighty-one days after he was admitted.

Patient 21 showed manifestations of vasomotor collapse on the thirty-first day of his illness. He developed over a period of hours pulmonary congestion, sinus tachycardia and right axis deviation. As there was no evidence of thrombosis or embolism, it was assumed that he had a toxic myocarditis. This patient was the most severely ill of all. His recovery was delayed to such an extent that he was evacuated on the seventy-fifth day of his illness because of persistent asthenia, emaciation and debility.

Four patients (6, 7, 4, 13) developed during convalescence precordial pain, effort syndrome and tachycardia. They became exhausted by slight exertion. Physical examination and electrocardiographic studies revealed no evidence of organic heart disease. All these patients were evacuated because of their profound and persistent neurocirculatory asthenia.

One patient (1) had evidence of a bilateral ulnar neuritis from the fifth to eighth weeks of his illness. Recovery was complete. He was treated intensively with vitamin B_1.

COMMENT

These 24 proved cases of typhoid or paratyphoid A in military personnel illustrate two accepted but not too generally recognized facts: (1) that typhoid or paratyphoid A occurs among immunized civilian and military populations and (2) that the diagnosis of such cases may be difficult. Sporadic cases occur not infrequently, but multiple cases are indeed rare. There is, however, a recent report of multiple cases in a military population. Thus Tullis [5] recorded observations on 7 cases of typhoid or paratyphoid A that occurred in military personnel in Sicily during October, November and December 1943. Five were diagnosed as typhoid and 2 as paratyphoid A. The causative organism was isolated from the feces and urine of 1 patient and from fecal specimens of 6. Only two blood cultures were taken, both of which were negative. Serologic confirmation of the bacteriologic diagnosis, as determined by the demonstration of a progressive rise in the antibody titer of successive samples of the host's serum, was obtained in only 2 of these cases. Serologic studies in which blood from the remaining 5 patients was utilized yielded inconclusive results. One patient showed no detectable antibody response, 1 showed a progressive increase in agglutinative titer to a heterologous organism but not to the homologous organism and 3 patients yielded essentially similar agglutinative titers for several antigens. As no evidence is presented to show that Salmonella typing serums were utilized in the specific identification of the organisms isolated from the feces of these patients, and as no data are given as to length of incubation in fermentation tests, it is doubtful whether all these cases should be accepted as authenticated cases of typhoid or paratyphoid A in vaccinated personnel. The evidence in 2 cases, however, is unequivocal.

5. Tullis, James L.: Typhoid in Previously Immunized Subjects, War Med. 7:95 (Feb.) 1945.

Our 24 proved cases of typhoid or paratyphoid A in military personnel suggested the possibility of a major break in the measures employed to safeguard health in all military units. Moreover, since this outbreak of typhoid or paratyphoid A is the first such recorded experience among combat troops in the Pacific, it seemed probable that Okinawa presented some circumstance not previously encountered by our occupation forces. Accordingly, an effort was made to account for this outbreak.

Four questions immediately came to mind. These were: 1. Had a break occurred in the sanitary precautions routinely and rigidly maintained by each military unit for the control of its water supply, food, excrement, flies and sewage disposal? 2. Did the men inadvertently expose themselves to a source of infection declared out of bounds or not recognized by local military authorities, thereby permitting the ingestion of a massive dose of the causative organism? 3. Was the causative organism a species of Salmonella other than S. typhosa, S. paratyphi A or S. paratyphi B and therefore not included in the accepted triple typhoid vaccine? 4. Were these proved cases evidence that the triple typhoid vaccine employed routinely for artificial active immunization affords less protection than is assumed? Each of these questions was investigated as far as possible. Certain points were difficult to ascertain, however, because the infections were contracted on Okinawa, whereas the patients were hospitalized on Guam.

It was learned that public health measures were enforced and that the men had been well indoctrinated as to the proper care of utensils, food, excreta and water. Flies, however, were present in excessive numbers in combat areas where it was impossible to keep food and mess gear free from them. As the natives had deposited their excreta and distributed it for fertilizer throughout the areas occupied by our troops, fecal contamination of food by flies undoubtedly occurred. It seems probable, however, that the dosage of Salmonella deposited by flies on the food of any one person would be exceedingly small. The likely source of infection became apparent when 12 of the 24 patients with proved infections readily admitted eating uncooked carrots, cabbage, onions, sweet potatoes, peanuts or sugar cane. The sugar cane had been cut and was lying on the ground. In each instance the patient gave a history of having obtained at least one or more of these products directly from Okinawan fields or gardens. The vegetables were cleaned summarily and in many instances eaten in great quantity. Except for eating these raw products, all denied emphatically the ingestion of water or food from any other than the military source of supply. Furthermore, it is probable that raw vegetables were eaten by the patients who denied doing so. As human excrement, "night soil," constitutes most of the fertilizer used on Okinawa, the immediate source of the infectious agent seems obvious. It is suggested that the patients ingested a massive dose of organisms, thereby overwhelming their relative immunity.

The organism recovered from each patient was identified biochemically and serologically as either S. typhosa or S. paratyphi A, thereby excluding the possibility of infection by a species of Salmonella not included in the triple typhoid vaccine.

Statistical evidence shows unequivocally that triple typhoid vaccine as routinely administered is effective in the prophylaxis of typhoid or paratyphoid A. It is a procedure that is practiced by all nations and rigidly enforced for Americans in military service. The protection confirmed is obviously adequate under most conditions of exposure. In the present series of cases, however, the ratio of the number of cases of paratyphoid A to typhoid was 8 to 1. This difference in incidence for the two forms of fever may be of significance but is difficult to evaluate. Paratyphoid A in military personnel in the United States is rarely diagnosed, nor has it been reported from any of the islands occupied prior to the invasion of Okinawa. It is therefore questionable whether the immunizing capacity of the S. paratyphi A component of triple typhoid vaccine has been tested adequately for its ability to prevent infection in men exposed under field conditions. Moreover, the immunity to infection induced by each of the three components is not only specific but also relative; it is therefore in balance subject to being overwhelmed by heavy exposure. This status of relative immunity in military personnel who presumably are "protected" not infrequently is overlooked, with the result that typhoid or paratyphoid A, usually modified or atypical, is wrongly diagnosed or tardily considered. Thus it is common in the first few days of the patient's illness for blood to be withdrawn for serologic studies. More usually, this same blood sample is cultured. Unfortunately, often only the single blood culture is taken, instead of interval blood cultures. The foregoing remarks are pertinent to the present investigation.

A negative Widal reaction during the first fortnight of illness does not rule out typhoid or paratyphoid A as a diagnostic possibility. Specific agglutinins commonly are absent or in negligible titer during the first several weeks. Thus in the present series of cases serum samples withdrawn from 9 patients with paratyphoid A during the first two weeks of illness were available for testing. Only 5 of these showed a significant agglutinin titer against the causative organism. In 3 cases the antibody response was minimal or absent. For the third the only significant titer recorded was against a heterologous antigen. In 2 additional cases significant antibody titers were not recorded, but the evidence is not conclusive since serum specimens were obtained only relatively late in the course of the disease.

It was found that bacteriologic culture of the blood is the most important single diagnostic procedure when a case is seen within two weeks of the onset of illness. Culture of the patient's blood at two day intervals for two weeks, or until positive, rarely fails in typhoid or paratyphoid A to reveal the causative agent. Accordingly, extra effort early in the disease may establish the diagnosis and thereby modify therapeutic measures, institute isolation precautions and reduce to a minimum further laboratory work.

In some cases of typhoid or paratyphoid A the Widal test is of great assistance in establishing the diagnosis, particularly if several specimens of serum taken at intervals during the course of the disease are available for testing. A sharp rise in agglutinin titer against a single organism early in the disease is practically diagnostic. A series of high agglutinin titer readings against one organism later in the course of the disease is significant if the titers against the other organisms are definitely lower.

On the other hand, a negative Widal test cannot be depended on to rule out the possibility of typhoid or paratyphoid A. In several of our proved cases of paratyphoid A significant agglutinin titers failed to develop against the causative organism. In several other cases

in which agglutinins did appear, comparable titers against heterologous antigens were observed. The reason for the failure of specific agglutinins to develop is not clear. The explanation for the appearance of agglutinins against heterologous organisms may result from the presence of common somatic antigens in the three species and in part to nonspecific anamnestic reactions, since all subjects had been immunized previously with TAB vaccine.

It is believed, therefore, that every effort should be made to establish the diagnosis of typhoid or paratyphoid A by the isolation of the specific organism from blood, urine or feces. The Widal test is frequently of no aid in making or ruling out the diagnosis, and in the case of the previously immunized subject from whom only one serum sample is available for testing the results may be frankly misleading. Furthermore, it is difficult to compare results reported by two investigators unless standardized antigens have been used in both series.

Cases of typhoid or paratyphoid A which were not specifically diagnosed undoubtedly occurred on Okinawa. During the late spring and early summer of 1945 a number of patients were admitted to hospitals on that island because of fever of unknown origin. The clinical picture in this group was one of sustained fever out of proportion to the patient's sense of comparative well being. Little bacteriologic work could be carried out under existing conditions, and the serologic evidence was equivocal. Several of the cases of typhoid or paratyphoid A reported in this series came originally from this group, and it is likely that some of the other cases of "Okinawa fever" were in reality typhoid or paratyphoid A. During the preparation of the manuscript 4 additional cases of typhoid or paratyphoid A were detected on Guam, and the diagnosis was proved in 3 patients on Saipan.[6] These men had recently returned from Okinawa. It is possible that some of the men whose condition was not recognized will become chronic carriers of typhoid or paratyphoid A bacilli and as such will constitute a distinct public health menace, particularly on their return to areas where TAB immunization is not the rule for the general population.

SUMMARY

The occurrence of the clinical picture of typhoid or paratyphoid A in several patients recently evacuated from Okinawa with a diagnosis of fever of unknown origin stimulated studies that led to the detection of 3 cases of typhoid and 21 cases of paratyphoid A in military personnel previously immunized with standard TAB vaccine. The clinical findings closely resemble those characterizing the disease in unvaccinated subjects. The case fatality rate was nil, although 5 patients developed complications. Repeated blood cultures proved to be the most valuble diagnostic procedure; serologic findings were often noncontributory. Infection appeared to have been acquired through the eating of raw vegetables in combat areas on Okinawa, where the use of human night soil as fertilizer is widely practiced.

6. Capt. J. D. Rosenbaum, M. C., A. U. S., 39th General Hospital, brought to our attention 3 cases of paratyphoid A in soldiers evacuated from Okinawa to Saipan for hospitalization. He supplied a summary of the clinical and laboratory data on which he established the diagnosis for each case. Two of these cases add interest to the present study; 1 case by way of adding emphasis to the need for repeated blood cultures early in the disease, for he recovered the organism from only one of nine blood cultures taken in the first seven days following admission; the other case in that an afebrile period of nineteen days with apparent convalescence after forty-four days of fever was succeeded by a relapse as evidenced by clinical illness and fever for ten more days.

THE STATUS OF THE GENERAL PRACTITIONER, PRESENT AND FUTURE

S. A. THOMPSON, M.D.
and
S. B. THOMPSON, M.D.
Camden, Ark.

In the addresses before medical meetings and in the papers in the medical literature today one sees more and more concern over the shortage of specialists certified by the various specialty boards. Many of these utterances imply that this shortage indicates an inadequacy of medical care now available. Our purpose in this presentation is to point out a trend toward the concept that only specialists are qualified to treat patients, to question the validity of this concept and to present a plan to halt or reverse this trend. It is not our purpose to question the importance of highly trained specialists in the treatment of patients: simply to question the necessity of their treating all patients.

For convenience of discussion the system of the practice of medicine in which the patient has no choice of physician, in which supervision of the physician in charge of a patient is exercised authoritatively and in which remuneration for services is not accomplished between the physician and patient directly, will be referred to as regimented medicine. This system includes the medical service of the military services, the Veterans Administration, medical teaching centers, certain industrial medical plans and other similar systems. The opposed system wherein a patient selects and remunerates his physician and where the physician is free from authoritative supervision will be termed the private practice of medicine. The relative merits of these two systems will not be discussed.

THE TREND

Those who served in the army hospital system are familiar with the operation of the Consultants Division of the Surgeon General's Office. Medical officers were classified as to specialty training and as to relative competence within the specialty. On the basis of a number so derived, assignments of individual officers were made. For example, the number 3153 indicated that the officer was a medical officer qualified as an orthopedic surgeon. The letters A, B, C and D were used to denote relative competence. D rating indicated minimal training and experience in the specialty and was used, for example, to denote an officer who had had only an internship prior to military service and had been given a brief army course in his specialty. Thus, an officer rated as 3153 D would likely serve on an orthopedic staff under supervision of a higher rated officer. A C rating indicated training incomplete but with sufficient background and experience to function as a specialist without supervision if necessary. Men taken into service directly from residences, men with experience in a specialty but without formal training, were usually given this rating. Thus 3153 C would lead to assignment as assistant to an orthopedist in a large hospital unit or chief of orthopedics in a smaller unit. In actual practice many C rated men served as chiefs in the larger hospitals, owing to the scarcity of men with higher ratings. B rating indicated certification by a specialty board or equivalent training and experience. Thus 3153 B men were the ones the Army desired to use as orthopedic chiefs in their general and larger station and evacuation hospitals. The A rating was reserved for men of professional rank and served

primarily as consultants and as chiefs in the specialty centers. The introduction of this system resulted in improvement in medical care and in medical personnel assignment. It brought about the conversion of indifferent, politics ridden hospitals into miniature teaching centers and it resulted in young medical officers setting their goal at certification in order to obtain the coveted higher rating. Where did the general practitioner fit into such a system? In the hospital system, if he wished to treat patients, he had to serve as a "junior specialist" in a capacity similar to that of the D rated specialist. Promotion in military rank depended on the position occupied, and position in the professional field depended on specialty rating; not at all uncommon was the sight of a 30 year old chief with 40 year old assistants. Is it surprising that so many chose administrative, sanitary and field duties where promotion was not dependent on specialty training? Certainly physicians subjected to this system will emerge from the service feeling that there is a very high premium on specialty training. What of the patient—the 11,000,000 soldiers? His unit surgeon, the Army's nearest approach to a family physician, was rarely allowed to treat him in quarters, had minimal equipment in his dispensary and relinquished contact, in most instances, when the patient was hospitalized. For many complaints of relatively simple character the soldier was referred to the hospital specialty outpatient clinics and, when hospitalized, his case was controlled completely by men who were considered specialists. If he had complaints in two different body systems, almost invariably he saw two doctors. Is it unreasonable to expect that he may emerge with the impression that only specialists are capable of treating him?

With the war over and soldiers converted to veterans, this may pass. Will it? The veterans' hospitals operate in a very similar manner, and the newly created consultants system of the Veterans Administration is almost identical with that of the Army. In THE JOURNAL of February 16 General Hawley[1] indicates the concern of the Veterans Administration over securing specialists by pointing out that the law provides a 25 per cent increase in base pay and original appointment at a higher grade for men certified by specialty boards. Further, he states that "physicians in the service of the [Veterans Administration] will be encouraged to train for certification in the specialty of their choice." Will not the eventual culmination of this policy be certification of all physicians serving the Veterans Administration? Here, again, all patients admitted to the hospital will be treated by specialists. General Hawley[1] states that 19,000,000 men will fall under the care of the Veterans Administration. The families of these are likely to think as they do. If veterans have an average of three dependents, it is conceivable that 76,000,000 members of the American population may be indoctrinated with the concept that only specialists are capable of treating patients.

The Veterans Administration program of making agreements with the state medical societies for care of service connected disabilities of veterans by physicians and hospitals of the veteran's home community does allow some participation in their care by general practitioners. For example, the agreement with the Kansas society provides that a veteran claiming service connected disability will be sent to a physician of his home community for complete physical examination. This examiner then recommends that the veteran be further examined by a specialist in whose field the alleged disability falls, if indicated. The disability rating board then acts on the combined reports. That this may be an act of expediency resulting from the overcrowding of the Veterans Administration hospitals rather than a Veterans Administration policy to permit participation by the general practitioner is indicated by the fact that this system is to be used only when the Veterans Administration hospitals are filled. In THE JOURNAL, Oct. 6, 1945 Dr. DeBakey[2] recommended that treatment under this system be given by staff physicians selected on the basis of certification by the various specialty boards. Although Dr. DeBakey's opinion is strictly his own, it is probably in accord with that of most other members of the Consultants Division of the Army, and the liaison between the Army and the Veterans Administration consultants is very close. From this one may reach the conclusion that even in the local care the trend of the Veterans Administration will be toward the concept of total specialization.

The Pepper bill now before Congress would perpetuate the maternal and infant care of the Emergency Maternity and Infant Care Program for all families. A committee from the advisory board to the Children's Bureau recommended that only certified specialists be allowed to participate in this program. The advisory board did not accept the committee's report, but it is indicative of the trend of thinking now in progress.

In the medical teaching centers where our students, interns and residents are trained and where so many of our low income group receive their medical care, a similar trend is apparent. The organizational structure of most of them is familiar to all who have passed through them. Each patient is seen in a specialty clinic or admitted to a specialty service. All cases, including the most trivial and routine cases handled daily by the general practitioner in private practice, are treated by specialists or under the supervision of specialists. The teacher of medicine who uses his contempt for the general practitioner as a substitute for humor is present, unfortunately, in many such centers. Since the teachers of medicine are specialists, it is only natural that they should glorify the role of the specialist even where such feelings are not expressed. Dr. DeBakey,[2] in his previously quoted article, says with genuine concern that "there are in the United States today some 160,000 practicing physicians, of whom only slightly more than 20,000 are certified by the various specialty boards as qualified in their chosen fields." Is a ratio of one specialist to eight general practitioners low? Undoubtedly it is if all patients must be treated by specialists, as the present policies of the armed services, the Veterans Administration and the medical teaching centers imply they should be.

What of private practice? More and more common is the patient who feels that his differential diagnostic acumen is such that he can select the proper specialist without benefit of advice from his family doctor, and it seems reasonable to anticipate that this group will become more numerous as the previously mentioned indoctrination progresses. More and more prominence is being assumed in private practice by the group clinics, and the trend in these appears to be steadily toward specialization. If one will glance through the classified advertisements in THE JOURNAL, "wanted, specialist in . . . to join group, must be certified" will be found

1. Hawley, P. R.: New Opportunities for Physicians in the Veterans Administration, J. A. M. A. **130**: 403 (Feb. 16) 1946.

2. DeBakey, M. E.: Our National Medical Resources, J. A. M. A. **129**: 417 (Oct. 6) 1945.

to be the approximate wording of a great many. Does not the absence of general practitioners from many of these groups imply to the patient that complete care does not include the general practitioner?

The one purpose of the foregoing material is to show that a trend is under way toward a concept that only specialists are competent to treat patients. If this doctrine is accepted, the concern exhibited by Dr. DeBakey [2] and felt by many others over a one to eight ratio of specialists to general practitioners, the preoccupation of the Veterans Administration and other regimented systems over the shortage of qualified specialists and the feverish activity of the various specialty organizations to provide additional residencies are understandable. If the profession accepts it, steps must be taken to allow the physicians of private practice to acquire the required training just as General Hawley [1] has promised the men of the Veterans Administration. Can the medical schools conscientiously send out a man with only an M.D. degree if they feel that he is not qualified to treat patients until he becomes certified by a specialty board?

VALIDITY OF THE CONCEPT

Suppose the profession does not accept this concept. Is the position that many patients may be treated adequately by general practitioners tenable? Dr. B. A. Hopkins [3] in the chairman's address before the Section on General Practice of the Southern Medical Association quotes Dr. Pressley as saying "It is the definite conviction of some of the outstanding leaders of the medical world that from 80 to 85 per cent of those seeking medical care could be skilfully and successfully cared for by a well trained general practitioner." After reviewing over 2,000 consecutive individual cases, Dr. Hopkins found this estimate conservative. A similar impression is echoed by medical leaders at every meeting where discussion of this topic arises.

The basic policy of the private practice of medicine, even today, rests on the general practitioner who takes care of the routine ills of all members of the family and refers them to appropriate specialists when occasion demands. Is this an outmoded system? Has it failed? Is it necessary to have a pediatrician prescribe for the children and an internist for the parents when the same upper respiratory infection strikes several members of a family? Must the orthopedist be called for the contusion, sprained ankle and undisplaced fracture? These examples are not absurd; this sort of thing occurs daily in the previously described regimented systems. This may be more controversial, but does adequate care require the presence of a certified obstetrician at a normal delivery? A man who has spent the time and money required to become certified can reasonably expect a larger fee for this work; but is it necessary for patients to pay such fees for routine care?

Two basic criticisms have been leveled at the system of general practice. First, failure of the general practitioner, on occasion, to differentiate between the trivial and the serious. For example, the sprained wrist which the general practitioner may bandage and give reassurance about may be found to be a fractured carpal navicular when seen by the orthopedist. Failure to immobilize may result in a preventable permanent disability. The fractured lateral malleolus requiring simple immobilization may also present a tibiofibular diastasis requiring more involved treatment. Specialists in other fields can cite equally telling examples within their experience. In other words, the general practitioner sometimes fails in his very important function of referring patients to specialists at the proper time. The answer to this criticism is for the general practitioner to become more proficient in differential diagnosis. This will be amplified later.

Secondly, the failure of the general practitioner to observe the limitations of his training is a very serious criticism. That some general practitioners fail to refer patients requiring specialized care may be attributed to their fear of loss of prestige and income; of the two, prestige is probably far more important. The indoctrination of the public and the young physician with the idea that the specialist is a vastly superior being is, to a large extent, responsible for the fear of loss of prestige and leads many general practitioners to try to create the illusion, both to themselves and to the public, that they are, more or less, specialists. The answer to this lies in the improvement of the status of the general practioner and his indoctrination with regard to the dignity of his position as a family physician.

The abuses leading to these criticisms, while serious, are susceptible of being corrected. Too, the criticism is directed at certain individual general practitioners and not at the system of general practice.

What is the case for the general practitioner? The economic waste involved in specialty care for routine conditions has already been mentioned, but, more positively, what has the general practitioner accomplished? During the past fifty years the life expectancy has been increased from 33 to 60 years, maternal and infant mortality has been lowered tremendously, many infectious diseases have been all but eliminated, and numerous other great strides have been made. Using Dr. DeBakey's statistics,[2] seven eighths of the physicians today are general practitioners. Of the one eighth who are specialists, many are quite young and many are engaged in full or part time research. One may safely conclude that well over 90 per cent of medical care to patients has been given by general practitioners during this forty year period. Has the general practitioner not been successful in bringing the advances of medical science to the patient? Surely this implies that he is capable of treating patients.

How does the population fare in the system when he is eliminated? The lowest income group of a large city receive their medical care, for the most part, from teaching hospitals, where all patients are treated by or under the supervision of specialists. The finest of equipment and professional skill are available. In towns of 10,000 or less, patients are treated by general practitioners with quite limited facilities and are referred to private specialists or medical centers, depending on financial status, if their needs warrant. One needs only to observe the difference in appearance of these two groups to see which has the higher health standards. True the social conditions in small towns are more conducive to health than are those in a city's slums, but may not this be a reflection, to some extent, of the success of the two systems of the practice of medicine? Can the businesslike chief resident, or even the suave professor, hope to compete with the well known and beloved family physician in persuading a family to modernize its toilets, cover its garbage can or inoculate its children? Which, likely, would be more successful in persuading the head of the house that it really is necessary for him to give up tobacco now that he has Buerger's disease, or that his wife must have extensive and dangerous surgery in the hope of eliminating carci-

3. Hopkins, B. A.: The General Practitioner and Rural Medical Care, South. M. J. **39**: 106 (Feb.) 1946.

noma, or that his young daughter must have rest, sunshine and milk until her chest films clear? The specialist can expect far better results if he can count on the influence and moral support of the family physician in seeing that his specialized regimen is followed as he recommended.

There is reason to believe that, in many instances, a patient may receive better care by routinely consulting his general practitioner before seeking the attention of a specialist. No past or personal history, however skilfully taken, can approach in comprehensiveness the knowledge possessed by the doctor who delivered the patient, treated him for measles and whooping cough, gave him his inoculations, stood by while the otolaryngologist removed his tonsils or the orthopedist reduced his football fracture, advised him prior to marriage, nursed him through his period of mental depression and watched the gradual rising of his blood pressure. By having cared for his parents, siblings, wife and children the family doctor may know more of his family problems than the patient himself. With such background of information is it not possible that his opinion on some obscure complaint may be far more valuable than that of the most highly trained specialist? The importance of seeing the patient as an integrated personality in his natural environment has been strongly emphasized by the writers on psychosomatic medicine. Can any specialist approach the family physician in his opportunity to do this?

What specialist can overcome the natural bias toward those things with which he deals? If the patient complains of low back pain, will not the orthopedist first check the posture, the urologist the prostate, the gynecologist the position of the uterus, the gastroenterologist the bowel habits? How many specialists must the patient consult before the source of his complaint is found? Many fruitless diagnostic procedures could be avoided and money, suffering and time saved if patients consulted the general practitioner and the appropriate specialist recommended by him.

What of the value of personalized attention? The sick person is more than bed number 14, diagnosis duodenal ulcer. He is Mr. John Doe, who has, among other things, indigestion. The services of the radiologist and clinical pathologist are most welcome in establishing the diagnosis, of the internist in outlining the management and of the surgeon in handling his complications duly appreciated. The adherence to the regimen outlined and the eventual outcome, however, are far more dependent on the family physician who cajoles, threatens or placates as the occasion demands than on any or all of these. The returned service man has no specific complaint in regard to his medical care in the service; on questioning, he will admit, reluctantly, that he received the necessary care, but, somehow he was not satisfied. Frequently it is worded "They didn't pay any attention to me." He knows this is not literally true, but the personal touch was missing and on this occasionally rests the difference between recovery and invalidism. It appears inevitable that a system that does not include the general practitioner must give up much of the traditional doctor-patient relationship. Can medicine afford to discard such a useful weapon from its armamentarium?

PROPOSALS TO CHECK THE TREND

If the trend not just to increased specialization but to a philosophy that only certified specialists are competent to treat patients is accepted as existing and if it is believed that this concept is not valid, the medical profession is faced with an obligation to halt this trend. What can be done to retain and improve the present status of the general practitioner?

Since the trend is so much more pronounced in regimented medicine, it is felt that recognition of the general practitioner by the regimented systems would do much to improve his status in the minds of patients and young physicians. To implement this it is proposed that general practitioners be given staff appointments in teaching centers. A competent and successful general practitioner assigned to each specialty service would act as an adviser to the chief of service in regard to those parts of his specialty which should be emphasized in the training of general practitioners. It is believed that this would eliminate the situation where, for example, a future general practitioner completes the orthopedic service of his internship knowing well how to serve as assistant at a spinal fusion, which is of little value to him, but knowing little about the differentiation between sprain and internal derangement of the knee joint, the differentiation of which may save some future patient of his a permanent disability. This system might go far toward eliminating the first of the two serious criticisms of the general practitioner previously discussed. Secondly, it would enhance the prestige of the general practitioner in the mind of the young physician.

A second proposal to implement recognition by the regimented services is to establish general practice services in teaching, military and veterans' hospitals. These services could handle the routine, not necessarily minor, conditions usually handled in that community by general practitioners in a manner similar to that used in private practice. This would provide an excellent spot for training future general practitioners, would relieve the specialty services of the routine so that their energy might be devoted to cases requiring such highly trained skill and would enhance the prestige of the general practitioner in the mind of both patient and young physician. It would offer an excellent opportunity to inculcate in the young general practitioner the necessity of calling for specialty consultation when indicated and might do much to alleviate the abuses of both the major criticisms of general practitioners previously discussed. In the military service, particularly in garrison, an opportunity for the unit surgeon to treat his own men in the hospital for routine conditions could be provided on such a service and might go far to make the assignment as unit surgeon a popular one rather than the undesirable assignment it so frequently is at present. Since the apparent goal of the Veterans Administration is to make its hospitals as much like teaching centers as possible, the proposals for teaching centers would likewise apply to them. The navy in its ship assignments offers some opportunity for general practitioners, but it is subject to the same proposals as the army for its shore installations.

The agreements being made between the Veterans Administration and various state medical societies for care of service connected disabilities by local physicians in local hospitals is the only ray of hope for an improved status of the general practitioners now evident on the horizon of regimented medicine. In that it provides for general physical examinations and general medical care by general practitioners with reference to specialists when indicated, it may represent the beginning of a trend toward recognition of the value of the services of general practitioners by regimented medicine. It has been implied previously that this

may be an act of expediency rather than policy, but, whatever the reason for it, it gives the general practitioner an opportunity to demonstrate the value of his service to regimented medicine. It is urged that the general practitioners of the nation accept this opportunity as a real challenge. The big flaw in the agreement, from the standpoint of elevating the status of the general practitioner, is that the veteran can receive care in this manner only if the Veterans Administration hospitals are filled. It is proposed that, even when Veterans Administration hospital space is available, the veterans be given the choice of accepting his care in this manner or of going to a Veterans Administration hospital. This would make available to the Veterans Administration that previously discussed fund of knowledge possessed by the family physician and would provide the personalized medicine the veteran misses so sorely in military and Veterans Administration hospitals. For the general practitioner it would do much to enhance his prestige in the minds of the 19,000,000 veterans and their families. It hardly need be added that for cases requiring prolonged hospitalization and highly specialized care the veterans' hospital centers designed for this purpose are admirable and desirable.

In addition to, and in order to obtain, the recognition of regimented medicine the causes for criticism of the general practitioner must be eliminated or minimized. To do this it is proposed that the training of the general practitioner be standardized and improved. In the past, the general practitioner has taken the same type of internship as the embryonic specialist. The rotating service consists in one to two months on each specialty service. The disadvantages of this system and proposals for correction have already been presented. The second year internship, the mixed residency and short residencies in various specialties frequently send a man into general practice with a rather confused idea of what the capabilities and limitations are. Because one was allowed to do a few appendectomies in a one year internship, occasionally one honestly feels that one is competent to open an abdomen without supervision. The general practice service in teaching hospitals might do much to clarify in the minds of young physicians the limits within which they can safely practice. Training does not cease with entry into practice, and the proper training of the general practitioner must continue as does that of the specialist. The addition of sections on general practice in the American Medical Association and other organizations is a significant forward step. It is proposed, however, to bring the program closer to home. Would one be justified in considering it the solemn duty of the specialist to keep the general practitioners of his community informed on those phases of his specialty which apply to general practice? Might not the specialist be considered partially responsible if a general practitioner who habitually refers patients to him makes an error in his field? It is urged that specialists accept this challenge as their contribution to the improvement of the status of the general practitioner.

To eliminate or minimize the criticism that many general practitioners attempt to encroach on the field of the specialist to the detriment of the patient, the general practitioner must set his own house in order. It is believed that the foregoing measures to improve the status of the general practitioner will give him sufficient pride in his field that the temptation to encroach on the specialties will be lessened. An honest confusion as to what his limitations are can be corrected by improved training methods. Fundamentally, however, this is an individual problem in ethics and must be worked out by individual general practitioners with the guidance of the medical organizations.

As a method of improving the educational standards, as a means to bring about the limitation of the work of the general practitioner to that for which he is adequately trained and as an agency through which educational material directed at the profession and the public might be disseminated, an organization limited to general practitioners and with standards sufficiently high to make membership a significant honor might be considered. That there is a need for the general practitioner to put his house in order is implied in the criticisms already discussed and in the fact that the prestige of the family physician is on the decline, as indicated by the trend toward his elimination. Individual action, group action in local medical societies and free discussions at medical gatherings can do much to eliminate the abuses now prevalent. Most specialties, however, have found it advisable to organize and set up standards in order to dignify their group, and such organization may be the answer for the general practitioner.

CONCLUSIONS

1. The outlook for the general practitioner of tomorrow is not encouraging in the regimented practice of medicine. Some hope in this field is seen in the agreements between the Veterans Administration and the state medical societies. Proposals for recognizing the general practitioner by regimented medicine are not expected to make the regimented services particularly enticing to the general practitioner but could do much indirectly to improve his status in private practice.

2. The opportunity now available in the local care program of the Veterans Administration is a real challenge to the general practitioner to prove his value to regimented medicine.

3. The outlook in private practice for the general practitioner remains good, and it is felt that the proposals presented can do much to improve his status in this field.

4. The status of the general practitioners of tomorrow depends on concerted action by the general practitioners of today.

SUMMARY

A trend toward the concept that only specialists are competent to care for patients may be checked by adoption of the following plan:

I. Recognition of the general practitioner by regimented medicine through:
   A. Staff appointments for general practitioners in teaching centers.
   B. General practice services in teaching, military and Veterans Administration hospitals.
   C. Perpetuation of the Veterans Administration's system for care of the veteran in his local community with general practitioners participating.

II. Elimination of causes for criticism of the general practitioner through:
   A. Standardization and improvement of training of general practitioners.
   B. Limitation of the work of the general practitioner to that for which he is adequately trained.

III. Organization of general practitioners to implement these proposals.

Clinical Notes, Suggestions and New Instruments

ACCIDENTAL INGESTION OF DDT, WITH A NOTE ON ITS METABOLISM IN MAN

M. I. SMITH, M.D.
Bethesda, Md.

R. A., a man aged 46, a farm hand, weighing 140 pounds (63.5 Kg.) in the employ of Dr. Paul Bartsch of the United States National Museum, was given a 5 per cent solution of commercial DDT[1] in kerosene for use as an insecticide spray. Some of this solution in a bottle was carried in a pocket containing a supply of chewing tobacco. The cork came loose and an undetermined amount, estimated at about 1 or 2 tablespoons, was spilled on the tobacco. A plug of the tobacco was chewed on that day, July 2, and in about two hours, by his own account, he became nauseated and apprehensive and experienced a sensation of tightness, stiffness and pain of the jaws and soreness of the throat. He was apparently not aware of the odor or taste of kerosene. The nausea and discomfort increased. He took some magnesium sulfate for relief, in about two hours he vomited and by the following day he had fully recovered except for the soreness of the throat, which persisted for another day or two.

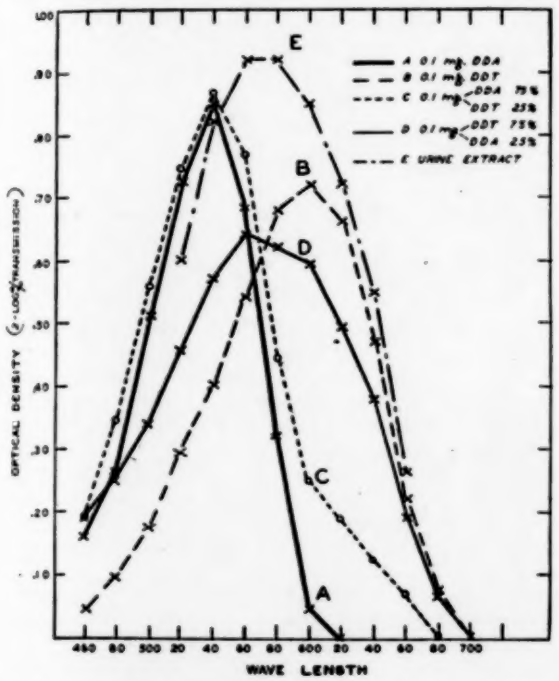


Chart 1.—Absorption curves of the nitrated products of DDT, DDA and their mixtures. All measurements of light transmission were made at a depth of 1.5 cm. and a total volume of 15 cc.

When consulted July 3 I requested a sample of urine. This was brought to the laboratory July 4. The urine presented a heavy opalescence, which did not clear on acidification with acetic acid. When shaken out with ether in a separatory funnel it became perfectly clear. Since the sample contained so much ether soluble material it was strongly suspected that the urine was contaminated with the insecticide and no further work was done with it.

On the sixth and eighth days following the incident (July 8 and 10) two small samples of urine were collected under the personal supervision of Dr. Bartsch. The pooled sample measured 300 cc. It was acidified with acetic acid and extracted with ether and the ether was dehydrated with anhydrous sodium sulfate, washed with water and evaporated to dryness by the same method used for the determination of organically bound chlorine in the urine of poisoned animals.[2] The residue was taken up in 10 cc. acetone, and one fifth of this was evaporated to dryness and nitrated by the method of Schechter and Haller.[3] The nitration product after extraction with ether was taken up in 10 cc. of benzene. Five cc. of this treated with 10 cc. of

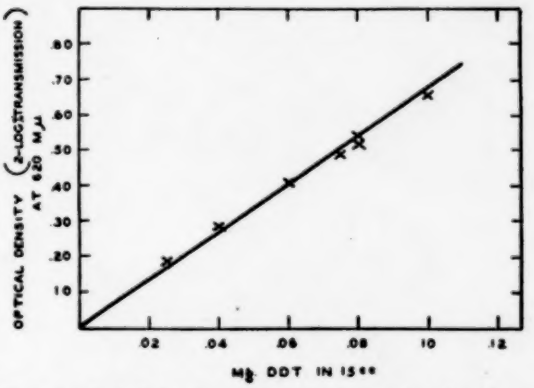


Chart 2.—Optical density at 620 millimicrons plotted against a graded series of concentrations of nitrated DDT in mixtures of nitrated DDT and DDA. A linear relationship is indicated. The data are given in detail in the table.

10 per cent sodium methylate in methyl alcohol gave a purplish blue solution which on spectrophotometric analysis showed an absorption maximum at 560-580 millimicrons. The absorption curve obtained by plotting optical density (2-log. per cent transmission) against wavelength as shown in curve *E*, chart 1, is similar in all essential respects to curve *D*, which represents the nitrated product of 0.1 mg. of a mixture of pure DDT[4] and DDA,[5] 75 per cent of the former and 25 per cent of the latter. Absorption maxima for the nitration products of the pure compounds are 540 millimicrons for DDA and 600 millimicrons for DDT as shown in curves *A* and *B* respectively. When mixtures of the pure compounds in the proportion of 75 per cent DDA and 25 per cent DDT are nitrated the absorption maximum does not change, as seen in curve *C*. Nitrated mixtures of pure compounds with a preponderance of DDT show a change of absorption maximum from 600 to 560 or 580 millimicrons, as shown in curve *D*.

Quantitatively it has been possible to estimate the amount of DDT in mixtures of DDT and DDA by plotting optical density at 620 millimicrons against concentration. Pure DDA shows no light absorption at this wavelength, and any light absorption at this point is related to the DDT in the mixture. This is shown in the table and in chart 2.

Absorption Maxima and Optical Density at 620 Millimicrons of Nitration Products of DDT, DDA and Their Mixtures

Mg. in 15 Cc.		Absorption Maximum, Millimicrons	Optical Density at 620 Millimicrons
DDT	DDA		
0.000	0.100	540	0.000
0.025	0.075	540	0.190
0.040	0.060	540	0.285
0.060	0.060	540-560	0.410
0.075	0.025	560	0.490
0.080	0.040	560-580	0.540
0.080	0.000	600	0.525
0.100	0.000	600	0.660

The nitrated product derived from the urine under discussion had an absorption maximum at 560 millimicrons (curve *E*, chart 1) and an optical density of 0.72 at 620 millimicrons. This indicates a mixture of DDT and DDA, with a preponderance

From the Division of Physiology, National Institute of Health.

1. GNBA-DDT, Geigy Company, Inc., New York.

2. Smith, M. I., and Stohlman, E. F.: The Pharmacologic Action of 2,2 Bis(p-Chlorophenyl) 1,1,1 Trichloroethane and Its Estimation in the Tissues and Body Fluids, Pub. Health Rep. **59**: 979, 1944.

3. Schechter, M. S., and Haller, H.: Colorimetric Tests for DDT and Related Compounds, J. Am. Chem. Soc. **66**: 2129, 1944.

4. p-p' dichlorodiphenyl trichloroethane.

5. p-p' dichloro diphenylacetic acid.

of the former, and reference to the curve in chart 2 indicates 0.106 mg. of DDT. Simple calculation indicates 1.06 mg. of DDT and about one fourth of this of DDA in the 300 cc. specimen of urine. Assuming an elimination of 1,500 cc. of urine per day, it may be concluded that about 5 mg. of a mixture of about 75 per cent of DDT and some 25 per cent of DDA per day was excreted on the sixth and eighth days after the incident.

Four specimens of urine ranging in amounts from 250 to 400 cc. obtained from as many laboratory workers (three of whom have been in contact with DDT for nearly three years) gave no evidence of containing anything resembling DDT or DDA. The sensitivity of the test as carried out in this laboratory is such that 0.01 mg. could be estimated quantitatively, and considerably less than this could be detected qualitatively.

COMMENT

On the basis of organic chlorine determination it has been shown that the elimination of DDT or its degradation products in the urine of poisoned rabbits reaches a peak on the second to the fourth day; it tapers off by the sixth day but continues to be eliminated in small amounts for two weeks or longer.[6] Of the chlorinated excretory products in the urine of rabbits about 80 per cent has been identified as p-p′ dichlorodiphenylacetic acid.[7] No data on the fate of DDT in other animals or man have been reported so far. The results of the analysis in the present case appear to indicate that unchanged DDT was excreted in the urine along with a relatively smaller amount of the acetic acid degradation product.

The clinical features in this case present but little interest. Evidently the dose ingested was too small to cause serious effects. The nausea and vomiting may or may not have been due to the ingested DDT.[8] The transient symptoms of stiffness and pain in the jaws and the anxiety felt by the subject during the first day appear to be the counterpart of hyperexcitability and muscular tremors and twitchings, especially noticeable around the head, seen in animals within a few hours of ingesting a toxic dose. Recovery was rapid and apparently complete, with no delayed or persistent effects such as were reported by Wigglesworth[9] in his case of poisoning by skin absorption. Unfortunately he made no urinary analysis to substantiate the diagnosis. The value of urinary analysis for DDT or degradation products as an aid in the diagnosis of suspected poisoning has been demonstrated in experimental animals, in which organically bound chlorine is found long in advance of any detectable symptoms in chronic poisoning with small subtoxic doses.[6] Analysis of the nitration products by spectrophotometric methods as outlined herein greatly increases the sensitivity of the test.

It should be added that in the course of some work now in progress about a dozen compounds chemically related to DDT have been examined spectrophotometrically. The nitration products of only two, p-p′ dichlorodiphenyl dichloroethane (DDD) and p-p′ dibromo diphenyltrichloroethane have given absorption curves similar to that of DDT. The nitration products of three of the compounds, p-p′ dichlorodiphenyl dichloroethylene (DDD′), p-p′ dichlorodiphenyl acetic acid (DDA) and p-p′ dichlorodiphenylketone (DDK) gave similar curves with an absorption maximum at 540. One of the compounds so examined, p-p′ dichlorodiphenyl methane (DDM), showed after nitration an absorption maximum at 520 millimicrons. The excretion product in the urine of rabbits fed DDD gives an absorption maximum after nitration at 540 millimicrons and appears to be DDA. The details of this work will be published later.

SUMMARY

A case of mild poisoning possibly due to DDT resulted from the accidental ingestion of an unknown amount of this substance through chewing of contaminated tobacco. Nausea, vomiting, a state of anxiety and stiffness and pain of the jaws were experienced for several hours and soreness of the throat for two or three days. Analysis by spectrophotometric methods of a pooled specimen of 300 cc. of urine obtained on the sixth and eighth days after ingestion showed the elimination of about 1 mg. of a substance which gave an absorption spectrum similar to that of a mixture composed of 75 per cent DDT and 25 per cent p-p′ dichlorodiphenylacetic acid.[10]

ALUMINUM HYDROXIDE GEL FOR EROSIONS IN PATIENTS WITH BOWEL FISTULAS

M. H. F. FRIEDMAN, Ph.D.
Philadelphia

A problem frequently encountered in the management of the patient with an ileostomy or colostomy is excoriation of the skin around the fistula. The more prevalent use of bowel exteriorization as a technic in surgery of the bowel in casualties of "total warfare"[1] has made this a problem of war surgery. In addition, the frequent establishment of bowel fistulas as procedures in various stages accompanying resection of segments of intestine for carcinoma or colitis has made the problem an important one in civilian practice.

The prime cause of the skin erosion in the vicinity of an intestinal fistula is believed to be in most cases the digestive action of the draining intestinal fluids. The proteolytic enzymes responsible are probably mainly of pancreatic origin;[2] thus the contents from the duodenum have a more corrosive action than the contents from the ileum, and the contents from the colon are least corrosive. For this reason colostomies are usually less troublesome with respect to excoriation than are ileostomies.

Treatment in the past has consisted mainly in protecting the affected area from the digestive action of the intestinal drainage fluid. Continuous aspiration of the intestinal contents has been tried.[3] The involved region has been covered with either various metallic compounds, such as aluminum and gold paints, or collodion, latex and other substances which resist digestion or with emulsions and oils which likewise are not digested and also "shed" the intestinal fluid. That these procedures have had indifferent success is attested by the frequency with which skin erosions persist[4] and the continued search for a better form of treatment.

Treatment involving destruction or inactivation of the proteolytic enzymes has recently been suggested. Since certain detergents, such as sodium lauryl sulfonate, are known to inactivate pepsin and trypsin, the use of detergent ointments has been advocated.[4] However, we[5] have found that the

6. Smith, M. I., and Stohlman, E. F.: Further Studies on the Pharmacologic Action of 2,2 Bis(p-Chlorophenyl) 1,1,1 Trichloroethane (DDT), Pub. Health Rep. **60**: 289, 1945.

7. White, W. C., and Sweeney, T. R.: The Metabolism of 2,2 Bis (p-Chlorophenyl) 1,1,1 Trichloroethane (DDT): I. A Metabolite from Rabbit Urine, Di(p-Chlorophenyl) Acetic Acid; Its Isolation, Identification and Synthesis, Pub. Health Rep. **60**: 66, 1945. Stohlman, E. F., and Smith, M. I.: The Isolation of Di(p-Chlorophenyl) Acetic Acid (DDA) from the Urine of Rabbits Poisoned with 2,2 Bis(p-Chlorophenyl) 1,1,1 Trichloroethane (DDT), J. Pharmacol. & Exper. Therap. **84**: 375, 1945.

8. In cats vomiting has been observed not infrequently some hours after the oral administration of DDT.

9. Wigglesworth, V. B.: A Case of DDT Poisoning in Man, Brit. M. J. **1**: 517, 1945.

10. Since this paper was written, two other reports have appeared on DDT poisoning in man: one by R. A. M. Case (Toxic Effects of 2,2 Bis [p-Chlorophenyl] 1,1,1 Trichloroethane [DDT] in Man, Brit. M. J. **2**: 842, 1945) showing the absorption of DDT through the skin and the other by K. R. Hill and G. Robinson (A Fatal Case of DDT Poisoning in a Child, with an Account of Two Accidental Deaths in Dogs, ibid. **2**: 845, 1945) indicating 150 mg. per kilogram being lethal in a child. The latter is consistent with data on the LD_{50} of DDT in some experimental animals as worked out in this laboratory (Smith and Stohlman, footnotes 2 and 6). Neither of these reports gives any data on the metabolism of DDT in man.

From the Department of Physiology, Jefferson Medical College.

This study was carried out with the cooperation of Dr. A. A. Walkling and the members of the resident staff of Surgery A (Dr. Thomas A. Shallow, chief) of Jefferson Hospital.

1. Gordon-Taylor, G.: Second Thoughts on the Abdominal Surgery of "Total" War, Brit. J. Surg. **32**: 247 (Oct.) 1944. Pilcher, L. S., and Nadeau, O. E.: Extraperitoneal Closure of Colostomy, Mil. Surgeon **97**: 190 (Sept.) 1945. Corbett, R. S.: A Review of the Surgical Treatment of Chronic Ulcerative Colitis, Proc. Roy. Soc. Med. **38**: 289 (April) 1945.

2. Florey, H. W.; Wright, R. D., and Jennings, M. A.: The Secretions of the Intestines, Physiol. Rev. **21**: 36 (Jan.) 1941.

3. Wiper, T. B., and Miller, J. M.: Surgical Aspects of Pancreatic Fistula, Ann. Surg. **120**: 52 (July) 1944. Crile, George, Jr.: A Device for Protecting the Skin and Collecting Fluid from Fistulas, J. A. M. A. **129**: 207 (Sept. 15) 1945.

4. Portis, S. A.; Block, C. L., and Necheles, H.: Studies on Ulcerative Colitis and on Some Biological Effects of Detergent, Gastroenterology **3**: 106 (Aug.) 1944.

5. Friedman, M. H. F.; Feaver, E. R., and Dougherty, I. H., to be published.

inactivation of trypsin in pancreatic juice by sodium lauryl sulfonate is dependent on the order of application of the enzyme and detergent to the substrate, and hence in practice the results obtained are unpredictable. Furthermore, treatment of 2 colostomy patients with salves containing sodium lauryl sulfonate gave poor results and was unsatisfactory, since the patients complained of extremely severe burning at the site of application.

Theoretically it should be possible to control the extent of skin erosions by bathing the affected area in solutions having a p_H unfavorable for digestion. Since the optimum p_H for tryptic digestion is between 7.0 and 8.0 (the exact value depends on the nature of the substrate), Selous and Perryman[6] have applied acid buffered gels (p_H 5.0) to the excoriated tissue. At this p_H the digestive action of trypsin is believed to be nil. While the benefits obtained by these English workers clearly show the role of p_H control in digestion, some of their experimental results are more probably explained on the basis of the adsorbing action of the gel (which consisted of gelatin, potato and gelatin or polyvinyl alcohol).

Pavlov[7] early called attention to the skin erosions which occur in dogs with experimental pancreatic fistula and noted the value of adsorbents in overcoming the deleterious effects of the pancreatic juice. In 1940 the Komarovs[8] reported that colloidal aluminum hydroxide inactivated pepsin, and in some recent studies (unpublished) we found that it also inactivates trypsin in vitro. The Komarovs also reported disappearance of ulcerated skin areas around the stoma of Pavlov pouches following routine injections of aluminum hydroxide into the pouch.

After verifying in a series of more than 50 dogs equipped with either gastric fistulas or gastric pouches that colloidal aluminum hydroxide prevents the frequently noted serious digestion of skin and underlying tissues by the draining gastric juice, we felt that possibly similar treatment would benefit dogs with excoriation and ulcers due to leakage from intestinal fistulas. Professor J. Earl Thomas and I have treated some 20 dogs having more or less extensive destruction of the skin and underlying tissues in the vicinity of duodenal and jejunal fistulas. The results obtained were so promising that material was made available to members of the surgical staff of Jefferson

Fig. 1.—Skin erosions around colostomy wound before treatment.

Hospital for treatment of patients with ileostomies or colostomies. This brief note is prompted by the gratifying results obtained to date on 23 patients, several of whom are still being studied. The presence of proteolytic enzymes in the bowel drainage fluid of some of these patients was verified by actual determination.

The aluminum hydroxide was applied to the ileostomy or colostomy in the form of a thick paste. We found it simplest to prepare this paste from the more liquid aluminum hydroxide gel, which is already available as an acid adsorbent in the

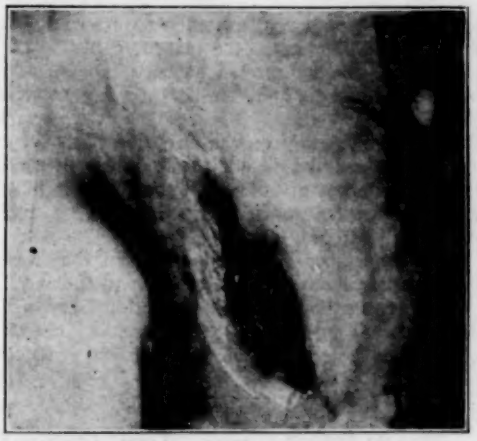


Fig. 2.—Same area after treatment with aluminum hydroxide paste. Healing was complete in ten days. The photograph was taken on the nineteenth day.

treatment of peptic ulcer.[9] Either one of two procedures, equally simple, was used. The commercially prepared gel was poured into wide evaporating dishes and allowed to evaporate with occasional stirring at room temperature for thirty-six to forty-eight hours or until the desired consistency was attained, or else the proper consistency was reached by low speed centrifugation, the supernatant liquid portion being discarded. A third procedure, that of thickening the gel by triturating with powdered calcium carbonate, kaolin, starch and aluminum hydroxide, was also used on numerous occasions; but the paste so prepared, while otherwise satisfactory, was not as smooth as the other pastes and tended to harden and cake much more readily.

The paste is applied in thick portions to both the excoriated area and the everted intestinal mucosa, the whole then being covered in the usual manner with several layers of gauze. When the skin is badly eroded or inflamed it is advisable to change the paste dressing every few hours during the first two or three days.

Unmistakable objective evidences of healing were noted by the second day of treatment. Subjectively the patients early reported relief from the itching and sensation of burning. The paste tends to absorb fluid, and the drier skin was said to be a distinct comfort. Once the skin had healed, we found it sufficient to apply a new layer of paste only when the dressings were changed because of soilage. It is of course unnecessary to emphasize that the wound be cleansed frequently. Oils and oily solutions should not be used as cleansing agents, since this prevents the aluminum hydroxide from adhering to the skin.

In 2 instances sulfathiazole and in 1 instance benzocaine were incorporated in the paste. However, the value of these substances so applied to the 3 patients is doubtful, since pain and spread of infection were readily arrested in other patients by the aluminum hydroxide paste alone.

A typical example of the effectiveness of the paste is shown in the accompanying illustrations. A woman aged 42 had extensive erosions around the colostomy which had stubbornly refused to heal under treatment with various ointments, petrolatum gauze dressings and metallic paint. Aluminum hydroxide paste applied over the area about six times daily produced alleviation of pain on the second day and almost complete healing by the tenth day.

We have found that little or no proteolytic enzyme could be detected in the drainage fluids of 2 patients with extensive perifistular erosions. It would seem that possibly the digestive

6. Selous, C. F., and Perryman, P. W.: Excoriation Around Fistulae: Control by Buffered Gels, Lancet 1: 240 (Feb. 24) 1945.

7. Pavlov, I. P.: The Work of the Digestive Glands, ed. 2, London, Charles Griffin Company, 1910.

8. Komarov, S. A., and Komarov, Olga: The Precipitability of Pepsin by Colloidal Aluminum Hydroxide, Am. J. Digest. Dis. 7: 166 (April) 1940.

9. Wyeth Incorporated supplied the aluminum hydroxide gel.

fluids from the intestine may have an irritant action in addition to a digestive action. These irritant substances may be products of protein cleavage or substances produced by the intestinal flora. The adsorbent action of colloidal aluminum hydroxide on bacterial toxins and on prothrombin [10] has been reported. Our results would strongly suggest that the irritant substances from the intestine also are rendered inactive by the aluminum hydroxide. Finally it should be pointed out that other adsorbents may possibly prove effective in skin excoriations. Certainly in several of their cases the favorable results of Selous and Perryman may be interpreted as being due to adsorption of the intestinal drainage fluid on the dressing material they employed.

To the recent comments [11] on the offensive odors from bowel fistulas may be added the fact that aluminum hydroxide gel is an efficient deodorant and that attending nurses have noted the odors from fistulas to be much reduced by application of the aluminum hydroxide paste.

Of no little importance is the consideration that the patient might develop a local or systemic reaction to the medications. None of our patients have had skin reactions, and no special dermatitis has been reported in pharmaceutical chemists and others engaged in the preparation of aluminum hydroxide gel.

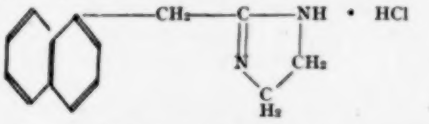
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PRIVINE HYDROCHLORIDE.—Naphazoline Hydrochloride. — 2(1-naphthyl-methyl)imidazoline hydrochloride. — $C_{14}H_{14}N_2.HCl$.—Molecular weight-246.73. The structural formula of privine hydrochloride may be written as follows:



Actions and Uses.—Privine Hydrochloride is a vasoconstrictor, which, when applied to nasal mucous membranes, causes a prolonged reduction of the local swelling and congestion. It is of value in the symptomatic relief of disorders of the upper respiratory tract such as nasal congestion of allergic and inflammatory origin, acute and chronic rhinitis, vasomotor rhinitis and acute and chronic rhinosinusitis. Care should be exercised, however, when vasoconstrictors are used for prolonged medication; privine hydrochloride is no exception, although the rebound congestion of the mucosa which it may cause can be alleviated within a few days simply by discontinuing all nasal medication. Those who respond with rebound congestion may tolerate solutions weaker than the commonly used concentrations. The site of action is possibly the peripheral sympathetic nerve endings, a property assumed for epinephrine, although further work is needed to clarify this point. So far, there have been no reports proving that sufficient drug is absorbed following local application to increase the blood pressure, although this possibility should not be forgotten.

Dosage.—Adults may use several drops of the 0.1 per cent or 0.05 per cent solution, depending on the relief obtained and the sensitivity of the individual mucosa. Relief can be expected for several hours. Occasionally a smarting sensation and sneezing may develop.

For children, the 0.05 per cent solution is suggested.

Privine hydrochloride solution is buffered to a *p*H of 6.2-6.3. It is affected by aluminum and should not be used in atomizers made of this material. Otherwise the preparation can be employed by any of the conventional methods.

Tests and Standards.—

Privine hydrochloride occurs as a white, odorless, crystalline powder possessing a bitter taste. It is freely soluble in water and in alcohol, very slightly soluble in chloroform and practically insoluble in benzene and in ether.

Privine hydrochloride melts between 255 and 260 C. A 1 per cent solution of privine hydrochloride is clear and colorless; it has a *p*H of about 6.2 and responds to tests for chloride.

Place about 0.5 Gm. of privine hydrochloride in a separator, add 25 cc. of water saturated with sodium chloride and 5 cc. of 10 per cent sodium hydroxide solution. Extract the mixture with five 15 cc. portions of residue-free ether; wash the combined ether extracts with two 5 cc. portions of water; filter, and evaporate the ether solution to near dryness on a water bath. Remove the remainder of the ether in a stream of warm air and dry the residue at 70 C.: the melting point of a portion of the characteristic crystalline residue is between 117 and 120 C.

A 0.05 per cent solution of privine hydrochloride yields a white precipitate with phosphotungstic acid, a mauve crystalline precipitate melting at 158 to 160 C. with Reinecke's salt and a yellowish crystalline precipitate melting at 193 to 196 C. with picric acid.

Dry about 0.5 Gm. of privine hydrochloride, accurately weighed, for four hours at 70 C.: the loss in weight does not exceed 0.4 per cent. Incinerate about 0.5 Gm. of privine hydrochloride, accurately weighed: the residue is not more than 0.2 per cent.

Transfer about 0.2 Gm. of privine hydrochloride, accurately weighed, to a suitable Kjeldahl flask and determine the nitrogen content according to the method described in Methods of Analysis of the Association of Official Agricultural Chemists, fifth edition, page 26, art. 23: the amount of nitrogen is not less than 11.15 per cent nor more than 11.40 per cent when calculated to the dried substance.

Transfer about 0.2 Gm. of privine hydrochloride, accurately weighed, to a 400 cc. beaker and determine the chloride content according to the method as described in Methods of Analysis of the A. O. A. C., fifth edition, page 34, art. 49: the amount of chloride found corresponds to not less than 14.15 per cent nor more than 14.40 per cent when calculated to the dried substance.

Transfer about 0.2 Gm. of privine hydrochloride, accurately weighed, to a separator; add 5 cc. of water to dissolve the salt and then add 10 cc. of normal sodium hydroxide previously saturated with sodium chloride. Extract the mixture with six portions (25, 20, 15, 10, 10 and 10 cc.) of ether; wash the combined ether extracts with two 5 cc. portions of water; extract the water washings with two 10 cc. portions of ether and combine these extracts with the main ether extract. Evaporate the ether solution, contained in an Erlenmeyer flask, to near dryness on a water bath and complete the removal of ether in a stream of cool air; add 10 cc. of neutral alcohol to dissolve the residue, dilute to about 50 cc. with water and titrate with twentieth-normal hydrochloric acid, using methyl red as the indicator. Each cubic centimeter of twentieth-normal hydrochloric acid is equivalent to 0.01234 Gm. of privine hydrochloride: the privine hydrochloride content found is not less than 97.0 per cent.

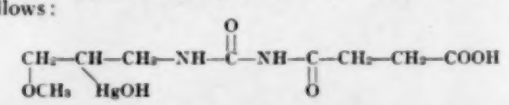
CIBA PHARMACEUTICAL PRODUCTS, INC., SUMMIT, N. J.

Solution Privine Hydrochloride 0.1% (For Adults Only): 30 cc. and 480 cc. bottles. Each 100 cc. contains privine hydrochloride 100 mg., exsiccated sodium phosphate 258 mg., sodium chloride 324 mg., potassium chloride 223 mg. and potassium biphosphate 742 mg., preserved with merthiolate 1 : 100,000.

Solution Privine Hydrochloride 0.05% (For Children): 30 cc. and 480 cc. bottles. Each 100 cc. contains privine hydrochloride 50 mg., exsiccated sodium phosphate 258 mg., sodium chloride 331 mg., potassium chloride 223 mg. and potassium biphosphate 742 mg. preserved with merthiolate 1 : 100,000.

MERCUHYDRIN.—Meralluride.—A mercurial compound derived from equimolecular quantities of mercurated allylsuccinylurea and theophylline.—Mercuhydrin contains not less than 31.0 per cent and not more than 33.0 per cent of mercury, when dried over sulfuric acid for twenty-four hours.—$(C_9H_{16}O_4N_2Hg + C_7H_8O_2N_4)$.—Molecular weight 629.

The structural formula of the mercurated allylsuccinylurea, 1-(methoxy-oxymercuripropyl)-3-succinyl urea, may be written as follows:



Actions and Uses.—See Mercuhydrin Sodium Solution.

Dosage.—See Mercuhydrin Sodium Solution.

Tests and Standards.—

Mercuhydrin occurs as an odorless white, crystalline powder, possessing a slightly bitter taste. It melts between 197 and 200 C. It is gradually decomposed by light and is incompatible with hydrogen sulfide and fumes of strong acids. An aqueous suspension of mercuhydrin is acid to litmus.

Mercuhydrin is soluble in hot water but is practically insoluble in water, alcohol, chloroform and ether at 25 C.; it is soluble in glacial acetic acid, in aqueous ammonia solution and in sodium hydroxide solution. It is slowly soluble in sodium bicarbonate solution, with evolution of carbon dioxide.

Place about 0.5 Gm. of mercuhydrin in a small flask, add 5 cc. of water and 3 cc. of formic acid; boil the mixture under a reflux condenser for ten to fifteen minutes: a gray precipitate of metallic mercury is formed. Decant the hot solution through a small filter paper and allow the filtrate to cool (chill in ice water). Collect the crystals of allylsuccinylurea on a small filter paper, wash with two 5 cc. portions of ice water, allow to drain, and dry the crystals over sulfuric acid in a vacuum desiccator for twenty-four hours: the crystals melt between 145 and 148 C.

10. Quick, A. J.: On the Relationship Between Complement and Prothrombin, J. Immunol. **29**: 87 (Jan.) 1935.

11. Babcock, W. W.: Odorous Wounds and Fistulas, J. A. M. A. **129**: 1094 (Dec. 15) 1945. Narat, J. K.: Odorous Wounds and Fistulas, ibid. **130**: 238 (Jan. 26) 1946.

Heat the filtrate and washings obtained in the foregoing test to the boiling point and then pass hydrogen sulfide through the solution for ten minutes; filter, cool the filtrate; transfer to a small separator; add 10 Gm. of sodium acetate and extract with three successive 10 cc. portions of chloroform. Evaporate the combined chloroform extracts nearly to dryness on a water bath and complete the drying by means of a stream of warm air. Suspend the residue in 5 cc. of water, boil to dissolve the residue, filter while hot and cool the filtrate in a bath of ice water to allow crystallization. Filter, wash the crystals with water, allow to drain and dry in a desiccator over sulfuric acid for twenty-four hours: the crystals melt between 270 and 274 C. and respond to identification tests for theophylline.

Suspend about 0.5 Gm. of mercuhydrin in 5 cc. of sodium acetate solution and dissolve by the addition of just sufficient tenth-normal sodium hydroxide (about 8.5 cc.). Filter and divide the filtrate into two portions. To one portion add 0.2 cc. of sodium sulfide solution and compare with the other portion: only a very faint coloration of the test solution is noticeable immediately.

Dry about 1 Gm. of mercuhydrin, accurately weighed, over sulfuric acid in a vacuum desiccator for twenty-four hours: the loss in weight does not exceed 3.0 per cent.

Ignite about 1 Gm. of mercuhydrin, accurately weighed, in a porcelain crucible: the residue is not more than 0.1 per cent.

Transfer about 0.1 Gm. of mercuhydrin, accurately weighed, to a 50 cc. Erlenmeyer flask fitted with a ground joint, add 15 cc. of nitric acid and a few glass beads; connect the flask to a reflux condenser and heat to boiling for one and one-half hours. Cool; rinse the condenser tube with water, collecting the washings in the flask; transfer the contents of the flask quantitatively to a 400 cc. beaker and dilute to approximately 150 cc. with water. Add 5 cc. of nitric acid and titrate with fiftieth-normal ammonium thiocyanate, using 2 cc. of ferric ammonium sulfate solution as the indicator. Use a control solution containing 20 cc. of nitric acid and 2 cc. of the indicator solution in 150 cc. of water to which exactly 0.3 cc. of the fiftieth-normal ammonium thiocyanate has been added. Titrate the unknown solution to the same color intensity as the control and subtract 0.3 cc. from the volume noted in the titration. Each cubic centimeter of fiftieth-normal ammonium thiocyanate is equivalent to 0.002006 Gm. of mercury: the amount of mercury found is not less than 31.0 per cent and not more than 33.0 per cent, calculated to the dried substance.

Transfer about 0.7 Gm. of mercuhydrin, accurately weighed, to a 250 cc. Erlenmeyer flask; add 125 cc. of water and 5 cc. of 10 per cent ammonia solution to dissolve the mercuhydrin. Add exactly 20 cc. of tenth-normal silver nitrate and warm on a steam bath until the white precipitate coagulates; cool to 30-40 C. and filter through a medium porosity fritted glass crucible, transferring the precipitate and washing with five 10 cc. portions of warm (40 C.) water until the wash water tests free of silver ion with sodium chloride solution acidified with nitric acid. Dissolve the precipitate on the fritted glass filter with 4 to 5 cc. of nitric acid; allow the nitric acid solution to filter into a clean flask without suction, and finally wash the crucible with hot water until the filtrate and washings approximate 150 cc. Cool; add 1 cc. of ferric ammonium sulfate solution and titrate with tenth-normal ammonium thiocyanate solution. Use a control containing the same volumes of water and nitric acid, with 1 cc. of the indicator solution, to determine any blank correction. Each cubic centimeter of tenth-normal ammonium thiocyanate is equivalent to 0.01802 Gm. of anhydrous theophylline. The amount of anhydrous theophylline found is not less than 29.0 per cent and not more than 31.0 per cent, calculated to the dried substance.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, *Secretary.*

SONOTONE MODEL 600 VACUUM TUBE HEARING AID ACCEPTABLE

Manufacturer: Sonotone Corporation, Elmsford, N. Y.

The Sonotone Model 600 hearing aid is a three tube instrument consisting of a transmitter and amplifier case, A and B battery unit, and either air or bone conduction reproducer attachments. Two different air and two different bone conduction receivers are available for use with this instrument.

Physical dimensions: Case, 5 3/16 by 2 7/16 by 1 1/16 inches. The air and bone conduction receivers and A and B batteries are of conventional size and weight.

Weight: Case, 7 ounces; with cords and air conduction receiver, 8 ounces. Current consumption:

A battery	(1½ volts):	80 milliamperes
B battery	(45 volts):	1.4 milliamperes
B battery	(33 volts):	0.92 milliampere
B battery	(22½ volts):	0.48 milliampere

Frequency response adjustments: The Sonotone Model 600 is equipped with a flexible set of tone control adjustments or compensators. A basic tone control on the back of the instrument may be adjusted to give wide frequency response (position B) or to attenuate the high frequencies (position A). A six position secondary tone control modifies the frequency response chosen by setting the basic tone control. The low frequencies are progressively attenuated as the secondary tone control is adjusted through positions 6, 5, 4 and 3. Secondary tone control positions 2 and 1 attenuate the middle range of frequencies (approximately 500 to 2,000 cycles). A so-called "bifocal control" placed next to the volume control and on-off switch at the top of the instrument decreases the gain of the instrument, with more attenuation of the low frequencies than the high. The "bifocal control" attenuates the gain 16.5 decibels at 250 cycles, 13 decibels at 1,000, 12 decibels at 2,000, 11 decibels at 3,500 and 10 decibels at 5,000 cycles. The receivers are made to certain characteristics and are so designated. The N2 air conduction receiver has a gradually rising frequency characteristic up to 3,000 cycles with 8 decibels less gain at 5,000 than at 3,000 cycles. The N1 receiver "peaks" broadly at 1,500 cycles and has about 17 decibels more output at 1,500 cycles than the N2 receiver. Response characteristics were not obtained on the H1 (wide range) and P1 (low frequency) bone conduction receivers.

Acoustical Gain (Maximum) for Pure Tones

(Air condution only N_2 receiver)

Frequency Adjustment	250	500	1,000	2,000	3,000	4,000	5,000	Cycle per Second
B6	49.5	48.5	50.0	63.0	59.0	55.0	37.5	decibels
A6	49.5	48.0	46.5	49.0	43.0	39.5	21.0	decibels
B5	37.5	38.5	41.5	57.0	55.5	52.0	33.5	decibels
B4	30.5	32.0	36.5	54.0	52.0	49.5	31.5	decibels
B3	15.0	23.0	30.5	50.0	49.0	46.0	28.0	decibels
B2	43.0	39.5	35.5	46.5	48.0	44.0	26.0	decibels
B1	38.0	32.5	24.5	47.5	48.5	44.0	27.0	decibels

These measurements were obtained with the 45 volt battery. The gain is about 7 decibels less with the 33 volt and 18 decibels less with the 22½ volt battery. The foregoing gain measurements would have been several decibels higher below 2,500 cycles if the N1 receiver had been used in the measurements. The measurements indicate the amplification efficiency of the hearing aid at the frequency levels shown, with the indicated battery voltage, receiver and tone control adjustments. The "bifocal control" was not in use.

Acoustical gain for speech: (Bone conduction only) H1 wide range receiver, with maximum gain, 45 volt B battery, B6 adjustments: 36 decibels. This value of 36 decibels represents the average gain for three persons, each of whom had losses of from 40 to 50 decibels for air conduction and approximately normal bone conduction acuity from 256 to 2,048 cycles. These persons perceived speech with 36 decibels less intensity through a high quality sound amplification system with the hearing aid than without it.

Sonotone Model 600

Physical and mechanical features: The case housing the transmitter and amplifer is rectangular, with rounded corners and edges, and is constructed of black plastic material. The combination volume control and "on-off" switch and the "bifocal control" are located on the top of the instrument. Both the basic and secondary tone controls are located on the back of the instrument and are flush with the case.

Performance: This instrument operates in an entirely satisfactory manner.

Recently advertisements for Sonotone Hearing Aids have appeared in *Life* magazine. In some instances these ads have incorporated quoted statements from users of the hearings aids. The use of testimonials in advertising of accepted products is against the rules of the Council.

The Council on Physical Medicine voted to accept the Sonotone Model 600 Vacuum Tube Air and Bone Conduction Hearing Aid for inclusion in its list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 8, 1946

RESEARCH ON CRASH INJURIES

The National Research Council is asking physicians to help in obtaining data on the nature, location and severity of injuries sustained by victims of "survivable" aircraft accidents. Except in accidents of hopeless severity, survival can—and often does—occur. People frequently survive serious crashes without dangerous injuries; serious or fatal lesions often occur in moderate accidents. Study of the factors that allow survival may aid in lessening dangers in aircraft and automobile accidents.

Research on injuries in crashes was begun in 1942 by the National Research Council working with the Safety Bureau of the Civil Aeronautics Board and study groups in the Army Air Forces and the Navy. The research was pioneered and is being carried on at Cornell University Medical College, in consultation with members of the staff of Cornell and the New York Hospital. Results already available indicate that the ability of the human body to withstand crash force has been greatly underestimated.

Prior to scientific analysis of accidents, authorities believed that the snubbing action of "thousand pound" safety belts would cut the body in two in severe accidents and cause serious or fatal intra-abdominal injuries in lesser accidents. Study now shows that "thousand pound" safety belts frequently are broken by survivors of severe accidents without evidence of injuries of abdominal viscera; this type of injury is reported among less than 1 per cent of survivors when the belt is used. A similar belief that restraining harness would snap pilots' necks prevented early use of this safety gear. By observing results of accidents the combination of safety belt and shoulder harness in military ships now has been increased in strength to hold the pilot against forces of 8,000 pounds. The end point of human tolerance, where crash force is properly distributed, has yet to be determined.

Because of the great dangers involved, human subjects cannot be exposed to extreme force in controlled experiments. All possible information must therefore be obtained when exposures to force occur accidentally. In order to relate resulting injuries to causative structure, Air Safety Investigators of the Civil Aeronautics Board now present special medical forms prepared by the National Research Council to physicians who observe victims of accidents. An anatomic chart permits recording of areas of fatal lesions and the site of other injuries. The weight of the injured person (an important factor in high speed accidents and safety belt breakages), the degree of concussion (mild, moderate or severe), the period of unconsciousness and evidence of intracranial or other internal injury are noted. Clinical facts are the basis for judging the severity of injury in respect to the severity of the accident. The location of contused areas on the head or torso in moderate accidents have given significant evidence on causes of fatal lesions under more severe conditions.

Reports which physicians have returned to crash injury research of the National Research Council already have brought about notable improvements. Instrument panels, for example, which were reinforced so solidly that they demolished the head under heavy impact blows are now being redesigned. By using ductile instead of solid structure, the energy of heavy "fatal" blows can be distributed and absorbed without fracturing the skull—frequently with only mild or moderate evidence of "concussion."

Control wheels of cast materials which have been found broken in crashes causing puncture of the chest with intrathoracic lesions now are being replaced by wheels which will support the chest and cause lesser injuries of the chest under extremely severe conditions. Structures which repeatedly caused massive injuries of the knees are being eliminated and elements substituted which moderate the chance of such injuries.

When accident details and medical details from large numbers of crashes are related and analyzed, many improvements can be made. Safety is basically the avoidance of injury. Serious and fatal injuries can be avoided in many future accidents when the nature and cause of typical injuries are known. Much that is being learned about airplane crashes has applicability in the field of motor car accidents. The value of the physician's contribution to future safety through this work cannot be overemphasized.

WARNINGS ON THIOURACIL LABELS

The Food and Drug Administration has announced that pharmacists who dispense thiouracil on prescription must place a warning on the label cautioning the patient that this drug may impair resistance to infection and suggesting that the patient should report to his physician immediately at the first sign of fever, sore throat or other symptoms of a cold. The Federal Food, Drug and Cosmetic Act exempts drugs dispensed on a written prescription of a physician from bearing a statement of the quantity of contents and a statement of the

active ingredients on the label. The law does not, however, exempt such drugs from the requirement that the labeling bear adequate directions for use or warnings necessary for the protection of users.

Thiouracil is a dangerous drug and may cause drug fever, skin rashes, leukopenia and agranulocytosis. The most important step in treatment of the complications of thiouracil [1] is early recognition of the complications and prompt institution of appropriate therapy.

The Food and Drug Administration is reported to have consulted with experts experienced in thiouracil treatment and to have stated that the consensus of these experts favored the placing of a warning to the patient on the label of the drug when dispensed on prescription. This warning apparently is intended to supplement and reinforce warnings given orally by the physician. Physicians should recognize that the pharmacist is required by federal law to place this warning on the label of the drug, even though it has been dispensed on written prescription. This requirement on the part of the pharmacist may disturb normal pharmacist-physician relationship unless the physician is aware of the ruling. Presumably the ruling is intended to prevent, as much as possible, needless deaths from this useful but potentially dangerous drug.

PREVENTION OF ERYTHROBLASTOSIS FETALIS

A study which may in time result in the development of a practical method for the prevention of erythroblastosis fetalis has been reported by Homburger [1] of Harvard Medical School.

In 1922 Swift [2] of the Rockefeller Institute showed that rabbits which received sodium salicylate in daily doses of from 0.16 to 0.2 Gm. per kilogram of body weight and at the same time were given intravenous injections of Streptococcus viridans or of washed sheep red blood cells had a greatly diminished formation of agglutinins, hemolysins and complement fixing antibodies. Homburger immunized groups of guinea pigs and rabbits by repeated intraperitoneal (guinea pigs) or intravenous (rabbits) injection of washed rhesus cells. Half of the animals of each group received 0.16 Gm. per kilogram of sodium salicylate either by stomach tube (guinea pigs) or by subcutaneous injection (rabbits). Seven days after the final injection the plasmas of all animals were titrated for anti-Rh agglutinins, Rh-positive human erythrocytes being used.

Fifteen of the 21 animals that had not received sodium salicylate showed relatively high titer anti-Rh agglutinins. Of 18 animals which had received sodium salicylate only 2 showed slight traces of these agglutinins. On account of the known toxicity of the drug Homburger [3] does not feel justified in suggesting a trial of salicylate therapy in the prophylaxis of erythroblastosis fetalis in man. His experiments, however, do show the possibility of some future chemotherapeutic approach to the control of isoimmunization.

Another promising lead is the "opposition factor" or "anti-immunity substance," recently described by Day [4] of the Pathological Institute, St. Mary's Hospital, London. This presumptive hapten is relatively specific for the pneumococcus. It is found in pneumococcus autolysate and in the autolysates of certain other bacteria.[5] Injected with pneumococcus vaccine, the "opposition factor" specifically "blocks" or otherwise inhibits the development of pneumococcus immunity. Its in vivo action is presumably analogous to the well known in vitro blockade by specific hapten. If Day's work is confirmed eventually some Rh hapten may be found that will specifically block the development of sensitivity to the Rh antigen.

1. Van Winkle, Walton, Jr., and others: The Clinical Toxicity of Thiouracil, J. A. M. A. **130**: 343 (Feb. 9) 1946.
1. Homburger, F.: Proc. Soc. Exper. Biol. & Med. **61**: 101 (Feb.) 1946.
2. Swift, H. F.: J. Exper. Med. **36**: 735, 1922.
3. Homburger, F.: Am. J. M. Sc., to be published.
4. Day, H. B.: J. Hyg. **42**: 532, 1942.
5. Day, H. B.: J. Hyg. **43**: 330, 1943.

Current Comment

BODY DISPROPORTIONS AND PERSONALITY

The possible relationship between body build and personality is intriguing. Recently Seltzer [1] reported an extensive comparison of physical measurements in relation to dominant personality traits. The work is based on 258 "normal" young men and includes an analysis of the frequency of certain dominant personality traits with relation to a considerable number of body disproportions. The latter included stature tall for body weight, shoulders broad for circumference of chest, head large for size of chest and hands large for body weight. Men with the disproportions mentioned (or one of the seven others of a similar type) were found to have a greater frequency of certain dominant personality traits, indicating lesser stability, lesser integration, greater sensitivity and complexity of personality and lesser capacity for making easy social adjustments. Seltzer states that some of the traits which go with these bodily disproportions are "unstable autonomic functions," "less well integrated," "mood fluctuations," "bland affect," "inhibited," "cultural," "lack of purpose and values," "inarticulate" and "asocial." Conversely, those men with traits indicating personality soundness or stability had fewer disproportions in their physiques than the average of the group as a whole. The author suggests that the disproportions are constitutional and as such may indicate a genetic element in the determination of personality and behavior. This hypothesis, as Seltzer himself points out, requires verification and must wait further study with other groups in different age levels and with varying cultural backgrounds. Even

1. Seltzer, Carl C.: Body Disproportions and Dominant Personality Traits, Psychosom. Med. **8**: 75 (March-April) 1946.

if correlations of this kind prove to be statistically significant, it would also be worth while to study the many exceptions before drawing any conclusions of a clinical or psychologic nature.

PRESIDENT TRUMAN VETOES OPTOMETRY CORPS BILL

For a number of years optometrists have persistently urged the Congress to enact legislation to establish an Optometry Corps in the Medical Department of the Army. During the present Congress they were successful in inducing the Senate and the House of Representatives to pass legislation to create such a corps, H. R. 3755, introduced by Representative Short of Missouri. President Truman, however, has refused to approve this bill and in justification of his action had this to say in his veto message of May 9:

> In my opinion a separate Optometry Corps would be out of harmony not only with the present structure of the Medical Corps but also with the contemplated organization of the Medical Department of the postwar army.
>
> During the course of the war the Army has utilized optometrists to the maximum extent consistent with sound medical practice. The Medical Department of the postwar army will likewise utilize optometrists to the maximum extent practicable. It is contemplated that they, together with the other professional and scientific groups included in modern medical service, will constitute a Medical Service Corps with appropriate commissioned rank. However, our military personnel are entitled to the best medical care available, and the creation of additional separate corps will, in my opinion, hinder rather than facilitate the accomplishment of this aim. Medical care must be directed and coordinated by officers professionally trained and competent to recognize pathologic conditions and assume complete responsibility for adequate care.
>
> Furthermore, H. R. 3755 would establish a promotion plan providing more rapid advancement for optometrists than for most other branches of the Army, and no persuasive reason is apparent why this particular group should be afforded more favorable treatment than others similarly situated.

STANDING ORDERS FOR THE INDUSTRIAL NURSE

The Committee on Education of the American Industrial Nurses' Association has written to the Council on Industrial Health calling attention once again to a curious evasion of responsibility by physicians who direct medical departments of industrial plants. These physicians seem reluctant to prepare, sign and administer standing orders for industrial nurses. The nurses contend rightfully that without such orders they are often called to perform services for which they are not prepared or which they are not legally entitled to perform. A simple refusal by a nurse to provide such an unwarranted service can be misunderstood by an employer. If she can point to specific instructions, her position is strengthened tenfold. Standing orders in industry as in hospitals constitute the professional status on which professional nursing standards rest. The Council on Industrial Health has prepared model standing orders to be modified as the supervising physician and industrial circumstances dictate.[1] Yet, even with this kind of assistance, many a nurse testifies that her medical director will not write orders or if prepared under his verbal direction he will not sign them. To help the nurse out of her quandary, committees on industrial health in state medical societies should adopt standing orders for use by nurses in industrial dispensaries with the understanding that these will operate unless replaced by specific orders prepared by the physician in charge. Only in this way can the chain of responsibility and continuity of professional relations which have existed so successfully in other forms of community medical service be satisfactorily maintained in industry.

1. Standing Orders for Nurses in Industry, by Council on Industrial Health, American Medical Association, J. A. M. A. **122**: 1247 (Aug. 28) 1943.

DR. CHANNING FROTHINGHAM'S TELEGRAM

The record of the hearings on the Wagner-Murray-Dingell bill include a telegram sent by Dr. Channing Frothingham, who now bears the title of chairman of the Committee for the Nation's Health, Inc. The telegram sent to many who did not answer was submitted with the signatures of fifty physicians who presumably telegraphed to him their approval. The hearings brought out, through questioning by Senator Donnell, the opinion that nobody could really understand the telegram since it was phrased in confused diction. Now a letter appears in *Philadelphia Medicine* for May 4, signed by Drs. Edward B. Krumbhaar, Joseph Stokes Jr., Francis D. W. Lukens, George I. Blumstein and T. Grier Miller, who say that they do not approve the national health program now under consideration and that they do not approve the Wagner-Murray-Dingell bill. Apparently all that Dr. Frothingham was able to accomplish by sending his message broadcast was to confuse a good many doctors who wanted to assert their desire to be of the utmost help in a wider distribution of medical care and to place a good many men under false pretense in the record of the hearings as supporting the Wagner-Murray-Dingell bill.

CONFERENCE ON RURAL HEALTH

Elsewhere in this issue (page 553) are published abstracts of the proceedings of the first National Conference on Rural Health. This conference was held in the Palmer House in Chicago on March 30, 1946. Representatives attending and taking part in the conference came from almost all sections of the country, thus demonstrating the truly national character of the meeting. Differences in point of view on the economic aspects of providing health services for rural areas were manifest. Opinions on these matters were freely expressed in a spirit of cooperative endeavor aimed at meeting the medical needs of the large and important rural population. The papers and discussions indicate that real progress is being made in developing the technics necessary to supply the benefits of modern medical progress to all.

MEDICINE AND THE WAR

NAVY

NAVY PLANS MEDICAL CENTER FOR GUAM

The U. S. Navy has planned a large medical center for Guam to include a 300 bed memorial hospital for natives and medical schools for native practitioners and nurses, in addition to the naval hospital and a tropical medicine research unit. The Guam Medical Center will serve as the headquarters of a medical program designed to furnish medical care for all Pacific islands under navy jurisdiction. Until the new hospital is constructed, natives are receiving treatment at a 300 bed quonset hospital operated by the Navy. Fourteen outlying dispensaries serve all communities in Guam.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA COMMENDED

A Mark of Commendation by the Navy Department was recently presented to the Medical College of the State of South Carolina, Charleston, by Capt. Marvin G. Kennedy, commanding officer of the Regional Navy V-12 Unit.

NAVY AWARDS AND COMMENDATIONS

Captain Waltman Walters

Capt. Waltman Walters, Rochester, Minn., was recently commended by the Secretary of the Navy "for outstanding performance of duty as chief of the Surgical Service and as surgeon in charge of the Dependents Unit, United States Naval Hospital, Philadelphia, from Dec. 28, 1944 to Oct. 23, 1945. . . . Captain Walters aided materially in organizing and administering a high type of resident training for medical officers in the Philadelphia Naval Hospital, which achieved the recognition and unqualified approval of the American board for certifying specialists. He maintained effective liaison between the surgical service of the Naval Hospital and the teaching institutions and surgical groups of Philadelphia and rendered counsel and guidance to the Rehabilitation Board while serving as a member of that activity. His professional skill and tireless efforts on behalf of war casualties reflect the highest credit on himself and the United States Naval Service." Dr. Walters graduated from Rush Medical College, Chicago, in 1920 and entered the service July 1, 1942.

Lieutenant Commander Lawrence J. Keenan

Lieut. Comdr. Lawrence J. Keenan, Fond du Lac, Wis., was recently awarded the commendation ribbon for meritorious service in connection with the early development of Guam as a senior medical officer of the 23d naval construction battalion. The citation accompanying the award stated that, "working day and night under difficult conditions, he succeeded in the elimination of all sources of contagion. His careful attention given to each man in the battalion kept the maximum number of men working on vitally needed projects such as the Orote field activities and the inner harbor development. His professional skill, leadership and devotion to duty were an inspiration to all with whom he served and were in keeping with the highest traditions of the U. S. Naval Service." Dr. Keenan graduated from Marquette University School of Medicine, Milwaukee, in 1935 and entered the service Jan. 18, 1943.

Lieutenant Commander John H. Sulzman

A Letter of Commendation was recently awarded to Lieut. Comdr. John H. Sulzman, Troy, N. Y., "for meritorious conduct in the performance of his duties in the Medical Research Department, Submarine Base, New London, Conn., from April 1945 to December 1945." The citation stated that, "by his comprehensive and tireless studies in the field of visual research and his far sighted planning in connection with a program of visual training, he was of invaluable aid to all branches of the armed forces and contributed materially to the successful prosecution of the mission of this command. His conduct throughout was an inspiration to all with whom he served and in keeping with the highest traditions of the Navy of the United States." Dr. Sulzman graduated from Columbia University College of Physicians and Surgeons, New York, in 1932.

Captain George Marshall Lyon

The Legion of Merit was recently awarded to Capt. George Marshall Lyon, Huntington, W. Va., "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as medical officer in connection with the safety of personnel employed in the Manhattan project. An outstanding authority in the field of gas warfare, Captain Lyon readily assumed his weighty responsibilities in connection with the medical aspects of the Manhattan project and, applying with resourceful initiative the principles of his varied scientific knowledge and expert technical skills, effected sound protective measures for the safety control of service personnel and civilian employees engaged in essential duties. By his keen foresight, tireless efforts and experienced judgment Captain Lyon greatly facilitated the development of a vital weapon which subsequently proved to be an important factor in the speedy termination of the war, and his loyal cooperation and professional achievements toward this end reflect great credit on himself, the medical profession as a whole and the United States Naval Service." Dr. Lyon graduated from Johns Hopkins University School of Medicine, Baltimore, in 1920 and entered the service April 20, 1942.

Captain Cecil Henry Coggins

The Bronze Star was recently awarded to Capt. Cecil H. Coggins, Oroville, Calif., for "meritorious service as a field medical officer with the United States Naval Group in China from Oct. 30, 1943 to April 15, 1945. Participating in raids, ambushes and patrols with guerrillas behind the Japanese lines, Captain Coggins performed various types of medical duties ranging from major surgical operations in the field to organizing medical training classes in first aid, minor surgery and field hygiene, in which he instructed the Chinese doctors and first aid men in the basic principles of his profession. He also organized and operated a small mobile field hospital which was instrumental in saving many American and Chinese lives, thereby rendering valuable and heroic service in this hazardous theater of war. His courageous conduct, disregard for his own safety and devotion to duty under difficult and perilous conditions reflect the highest credit on Captain Coggins and the United States Naval Service." Dr. Coggins graduated from Jefferson Medical College of Philadelphia in 1930 and entered the service June 16, 1930.

Lieutenant Commander Herbert R. Brown Jr.

The Bronze Star was recently awarded to Lieut. Comdr. Herbert R. Brown Jr., Rochester, N. Y., "for meritorious service in connection with operations against the enemy as medical officer in charge of the Naval Whole Blood Distribution Center at Guam, Marianas Islands from Nov. 1, 1944 to Sept. 21, 1945." Dr. Brown graduated from the University of Rochester School of Medicine and Dentistry in 1939 and entered the service June 11, 1942.

Commander Murray Glusman

The Bronze Star and the Presidential Unit Citation with Oak Leaf Cluster were recently awarded to Comdr. Murray Glusman, New York. Dr. Glusman graduated from New York University College of Medicine, New York, in 1938 and entered the service July 7, 1941.

ARMY

ARMY AWARDS AND COMMENDATIONS

Colonel Harold C. Lueth

The Army Commendation Ribbon was recently awarded to Col. Harold C. Lueth, Chicago. According to the citation accompanying the award, "During World War II the Medical Department carried out its mission with outstanding success. This achievement was made possible only through the combined efforts of all Medical Department personnel. Your service with the Medical Department has been exceptional when compared with others of the same grade of similar position, and I wish to commend you for your outstanding contribution as liaison officer between the Office of the Surgeon General and the American Medical Association from March 15, 1942 to Feb. 25, 1945." Dr. Lueth graduated from Northwestern University Medical School, Chicago, in 1930 and entered the service Oct. 1, 1940. He was recently appointed dean of the University of Nebraska College of Medicine, Omaha. (THE JOURNAL, April 27, p. 1253).

Lieutenant Colonel Laurence Miscall

Lieut. Col. Laurence Miscall, New York, was recently awarded the Legion of Merit for exceptionally meritorious conduct in the performance of outstanding services as surgical service coordinator and center consultant in thoracic surgery for the 6810th Hospital Center (Provisional) and later for the 804th Hospital Center during the period of July 11, 1944 to March 18, 1945. The citation stated that "Lieutenant Colonel Miscall achieved spectacular results in his determined effort to afford every possible care to wounded and suffering men who came for treatment. His singular professional ability and devoted practice of his profession combined in the development of a peerless thoracic surgical service which contributed a large share to the rehabilitation of men in the fighting forces of the United States." Dr. Miscall graduated from Cornell University Medical College, New York, in 1930 and entered the service Aug. 24, 1942.

Lieutenant Colonel Charles C. Verstandig

The Army Commendation Ribbon was recently awarded to Lieut. Col. Charles C. Verstandig, Hamden, Conn. The citation accompanying the award stated that "during World War II the Medical Department carried out its mission with outstanding success. This achievement was made possible only through the combined efforts of all Medical Department personnel." Said Major General Kirk "Your service with the Medical Department has been exceptional when compared with others of the same grade of similar position, and I wish to commend you for your outstanding contribution as medical director, Armed Forces Recruiting and Induction Station, New Haven, from March 1, 1943 to Dec. 31, 1945." Dr. Verstandig graduated from the University of Tennessee College of Medicine, Memphis, in 1939 and entered the service Aug. 1, 1940.

Lieutenant Colonel Milton Kissin

Lieut. Col. Milton Kissin, New York, was recently awarded the Soldier's Medal "for heroic actions and services on Aug. 19, 1945. On that date, prior to the surrender of the Japanese, he was sent to Canton as a member of one of the Allied emergency liaison teams by direction of the commanding general, U. S. Forces, China Theater, to establish initial liaison with prisoners of war and civilian internees in that area. This team, consisting of seven other American officers and enlisted men, eight Allied officers and men, landed at the White Cloud Airfield at Canton on Aug. 19, 1945, preceded by leaflets dropped to Japanese and Allied personnel in the area and announcing the arrival of the humanitarian mission. At the time of this landing the members of the team were told that air strips on all other fields in the area were mined and that the perimeter of the White Cloud strip was heavily mined. Through negotiations with Japanese authorities by American members of the team, arrangements were made for the team to remain as guests, begin a partial performance of their mission and even report by radio so long as messages were approved by the Japanese. However, as Allied members of the team made it obvious, even to the Japanese, that they did not consider it safe to remain, the team commander made the decision to depart and return later with a team made up entirely of American personnel. In his heroic performance of a dangerous assignment Major Kissin reflected great credit both on himself and on the United States forces in the China theater." Dr. Kissin graduated from Cornell University Medical College, New York, in 1928 and entered the service in November 1942.

Colonel Cleve C. Odom

The Legion of Merit was recently awarded to Col. Cleve C. Odom, commanding officer of Mason General Hospital, Brentwood, N. Y. The citation accompanying the award stated that "Colonel Cleve C. Odom, Medical Corps, Army of the United States, while serving as commanding officer of Mason General Hospital, distinguished himself through outstanding service. Colonel Odom expanded Mason General Hospital from a 1,320 to a 3,032 bed hospital during his tenure of command and provided instruction of the highest quality for medical officers and nurses undergoing instruction in the School of Military Neuropsychiatry operated at this station. Through his broad experience in neuropsychiatry and hospital administration, untiring efforts, remarkable initiative and enthusiastic and virile leadership, Mason General Hospital attained a prominent place in military neuropsychiatry and administered the best of care and treatment to the neuropsychiatric patients of the Army. His cumulative achievements reflect great credit on himself and the medical corps." Dr. Odom graduated from Vanderbilt University School of Medicine, Nashville, in 1916 and entered the service July 1, 1920.

Major Daniel F. Crowley

The Silver Star was recently awarded to Major Daniel F. Crowley, New York, "for gallantry in action on the afternoon of ..... Nov. 1943 near ..... Italy. Learning that there were some casualties in a draw about 2,000 yards from the battalion aid station, this officer and three enlisted men proceeded in an ambulance across a large open field, under constant enemy observation and heavy artillery fire. Finding one man dead and the other seriously injured, they administered first aid to the injured man. The ambulance had attracted a heavy concentration of enemy fire, and while lifting the litter into the ambulance one man was instantly killed by a shell. Undaunted by the continued heavy shelling directed at their ambulance, they drove back across the open field and brought the wounded man to safety. The courage under fire and high sense of duty displayed by these individuals on this occasion is in keeping with the highest traditions of the military service." Dr. Crowley graduated from the National University of Ireland in 1922 and entered the service April 19, 1943.

Major Philip E. Zanfagna

The Army Commendation Award was recently presented to Major Philip E. Zanfagna, Lawrence, Mass., "for performance of meritorious service while serving as post medical inspector, assistant chief of medical service, prisoner of war dispensaries officer, medical and sanitary supervisor of prisoner of war branch camps, Hospital Center, Camp Forrest, Tenn., from April 1945 to December 1945. Displaying unusual initiative, devotion to duty and administrative ability," said the citation accompanying the award, "Major Zanfagna (then captain) was largely responsible for the high medical and sanitary standards among prisoner of war units and contributed materially to the successful operation of this center." Dr. Zanfagna graduated from Boston University School of Medicine in 1934 and entered the service July 29, 1942.

Lieutenant Colonel Bernard J. Pisani

Lieut. Col. Bernard J. Pisani, New York, was recently awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding services as director of the Medical Field Service School, European Theater of Operations, from February 1943 to October 1944." The citation

further states that "Lieutenant Colonel Pisani's organization of the curriculum and assembly and instruction of the teaching staff of the special medical department school revealed a competence of the highest type. His supervision of the field training and professional education greatly increased the efficiency of the service of the nurses and medical officers who attended the school. Lieut. Col. Pisani's services during this period reflect the highest credit on himself and the armed forces of the United States."

Lieutenant Colonel Pisani was also honored with the Bronze Star Medal during the period of Feb. 13, 1945 to May 8, 1945 for "meritorious service in connection with military operations as executive officer, professional services division, Office of the Surgeon, Communications Zone, European Theater of Operations. The citation accompanying this award stated that "in addition to his administrative duties Lieutenant Colonel Pisani's professional qualifications as a surgeon and gynecologist have been widely used. His unusual attributes have made him particularly valuable in the field of posthostilities training and proper redeployment of units." Dr. Pisani graduated from New York University College of Medicine, New York, in 1933 and entered the service May 5, 1941.

Colonel Donald A. Covalt

The Legion of Merit was recently awarded to Col. Donald A. Covalt, Muncie, Ind., for his services with the Army Air Forces. The citation accompanying the award stated that "as convalescent training officer, Army Air Forces Hospital, Miami Beach Training Base, and later as executive officer of the Convalescent Services Program, office of the Air Surgeon, during the period from April 1943 to November 1945, Colonel Covalt rendered outstanding service of tremendous value to the Army Air Forces Medical Department and the military service at large. The Convalescent Services Program which Colonel Covalt organized and directed became a model for the Army Air Forces, and the experience of this project was utilized by other branches of the service and by the military services of our Allied nations." Dr. Covalt is now the assistant medical director of Medical Rehabilitation of the Veterans Administration. He graduated from Indiana University School of Medicine, Indianapolis, in 1933 and entered the service May 11, 1942.

Lieutenant Colonel Paul C. Morton

The Legion of Merit was recently awarded to Lieut. Col. Paul C. Morton, New York, "for exceptionally meritorious conduct in the performance of outstanding services as chief of the surgical service, 2d Evacuation Hospital, and surgical consultant, United Kingdom, Base Section, European Theater of Operations, from Feb. 22, 1942 to May 30, 1945." The citation accompanying the award further stated that "Lieutenant Colonel Morton has displayed a superior service in his pioneer studies in the relation of the drug penicillin to gas gangrene. His organization of special medical centers to care for unusual injuries were a notable contribution to the care of sick and wounded in this theater and materially assisted the medical field in the efficient performance of a vital mission." Dr. Morton graduated from Harvard Medical School, Boston, in 1922 and entered the service Jan. 21, 1942.

Captain A. Lewis Shure

An Army Commendation Ribbon for meritorious service was recently awarded to Capt. A. Lewis Shure, New Haven, Conn., for his services "from May 21, 1944 to Dec. 27, 1945 as chief of the Orthopedic Service Hospital at Fort Knox, Kentucky. Accomplishing highly technical assignments with distinction, Captain Shure reflected great credit on his profession and the military service." Dr. Shure graduated from Harvard Medical School, Boston, in 1927 and entered the service in August 1942.

MISCELLANEOUS

WHAT GERMAN OCCUPATION DID TO MEDICINE IN CZECHOSLOVAKIA

Francis Shattock, one of four British delegates to the World Students' Congress, visited Czechoslovakia in November 1945. In Prague he found that there were eight hospitals for 1,000,000 inhabitants; at most, he says (*St. Bartholomew's Hosp. J.* **2**:19 [March] 1946), patients have to wait only three weeks for admission. There were 9,000 undernourished children. At St. Anna's Hospital in Brno, of all the patients seen 30 per cent were tuberculous, and of these only 10 per cent could get proper treatment. Before the war there were 10,000 doctors in Moravia and Bohemia, but the number has been reduced to 5,000. In Prague there is a center for mass radiography, but this cannot be used as films for it cannot be obtained.

The nursing situation in Czechoslovakia is critical. In 1936 there were three nurses to 30 or 40 patients during the day, and one for the same number at night. In the chest and surgical blocks of the Bulovka Hospital there are only two nurses to 300 patients, and during the day only one to each ward, or 20 to 30 nurses for 300 patients.

During the occupation all universities were closed and stayed closed for six years. Now all the students who would have attended the universities during the war years have entered. This leads to impossible conditions. In Prague there are 6,000 first year medical students, 3,000 studying law, and 2,000 studying philosophy.

The delegates also paid a visit to the Faculty of Medicine and saw the chemistry and physiology departments as well as the department of anatomy and the museum. In the department of anatomy the professor and his assistant were busy preparing wall diagrams and anatomic models to replace those destroyed by the Germans. These are of inestimable importance in the absence of textbooks and lack of sufficient subjects for dissection. It is impossible to teach anatomy adequately to thousands of students, especially when it is realized that each student may be present in the anatomy dissecting rooms for only three consecutive weeks in the year.

Venereal diseases present a problem to the Czechoslovakian medical service on account of the German occupation. The German authorities during the occupation said that the German soldier on leave in Czechoslovakia had to be provided for; of course he was not allowed to produce a child with a woman of the "low" Czech race, so that they had to find prostitutes. Before the war this profession was practically extinct in Czechoslovakia, a condition brought about by an act for the prevention of venereal disease. The situation changed completely after the German occupation of the country. Figures are quoted in a document produced by the German police which stated that in 1938 in Prague there were only 440 prostitutes. In 1941 the number had increased to 5,000. A third of these were German women; this is a fantastically high proportion when it is remembered that the German population in Prague was only 3 per cent.

During a reception given at his palace by President Benes to all the delegates of the World Students' Congress, Shattock had the opportunity of meeting the rector of the Charles University of Prague. He had spent two years in the Terezin concentration camp, where he performed all his operations with a razor. His only drugs consisted of a small amount of aspirin.

There is a shortage of penicillin in Czechoslovakia. The Kounic Colleges in Brno were visited by the delegates, as it was there that many medical students were killed. The delegates placed wreaths around the three gallows, which had accounted for hundreds of lives of students, professors and patriotic Czechoslovakians. They saw the Castle of Brno, which would have been the largest underground concentration camp in Europe; it was in the process of construction when the Russians freed the country. Here they saw the special death chambers, with their floors sloping to a gutter in the center to carry away the blood, the gas chambers and also the chapel, where the altar had been removed, and in its place there was a colossal German eagle, weighing 51 tons, in front of which was the Holy Writ of the New Order—a copy of Mein Kampf in an illuminated cabinet.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Illinois

Roberg, O. T. Jr., Lt. Col., 2339 E. North Geneva Ter., Chicago.
Was, Harold, Major, 10855 Indiana Ave., Chicago.

Louisiana

Tisdale, Albert A., Medical Center Bldg., Lafayette.
Weed, John C., 3517½ Camp St., New Orleans.
Welch, James W., 922 6th St., Alexandria.

New Mexico

Malone, Earl L., Capt., 306 W. 2d, Roswell.

North Carolina

Barringer, Phil L., Capt., 340 10th Ave., Hickory.
Braudwell, Leslie J., Capt., Wendell.
Brookshire, Harley G. Jr., Major, 44 School Rd., Asheville.
Brown, Frank R., Capt., 917 Walker Ave., Greensboro.
Cekada, Emil B., Lt. Col., 1010 Green St., Durham.
Cox, Alexander M., Major, Madison.
Heinitsh, George, Lt. Col., Fayetteville.
McCall, Robert E. Jr., Capt., 236 S. Main St., Marion.
McCulloch, Rudolph P., Capt., 820 Buchanan St., Durham.
McGuffin, William C., Major, Arcade Bldg., Asheville.
Miller, Robert P., Capt., Lincolnton.
Moore, Roy H., Major, Box 909, Canton.
Phillips, Neal J., Capt., P. O. Box 116, Lattimore.
Pittman, William A., Capt., 118 Stedman St., Fayetteville.
Templeton, Ralph G., Box 80, China Grove.
Thomas, George J. Jr., 1420 Hattie Ave., Winston-Salem.
Thompson, John W. Jr., Murphy.
Way, Samuel E., 110 Hammond St., Rocky Mount.
Wilkinson, Charles T., Wake Forest.
Williams, Ernest H., 410 Sunset Ave., Rocky Mount.

North Dakota

Barger, James D., Major, Linton.
Bonzer, John D., Capt., Lidgerwood.
Curtis, Claude C., Major, Beach.
Waters, Pattison A., 1233 3d St. N., Fargo.
Weller, Lewis J., 1402 2d Ave. N., Grand Forks.

Ohio

Bakos, John, Capt., 10 W. Miller Ave., Akron.
Bayless, Francis, Lt. Col., 2316 Delaware Dr., Cleveland Hgts.
Beasley, Norris M., Capt., Grandview Heights, Athens.
Belmont, Morrison H., Capt., 139 Benita Ave., Youngstown.
Berg, Theodore, Capt., 115 Eastern Heights, Elyria.
Block, Gordon L. Jr., Capt., 801 E. Mitchell Ave., Cincinnati.
Bremner, Elizabeth A., Capt., Red Fern Rd., Columbia Station.
Brown, Charles G., Capt., 428 W. Park Ave., Mansfield.
Burton, Claud C., Lt. Col., U. S. Vet. Adm., Dayton.
Carson, James H., Lt. Col., 238 N. 5th St., Martins Ferry.
Cassaday, Charles E., Capt., 781 W. Town St., Columbus.
Clark, Clyde E., Capt., 1112 Oakdale Ave., Dayton.
Clark, John J., 1st Lt., 82 Park Ave., West Mansfield.
Cohen, Jacob, Capt., 216 Brabarton Rd., Steubenville.
Collins, James R., Major, 11311 Shaker Blvd., Cleveland.
Consolo, Charles W., Major, 89 E. Perry St., Tiffin.
Cook, George W., Capt., 328 S. Belle Vista, Youngstown.
Fisher, Abe A., Capt., 805 29th N.E., Canton.
Fisher, Alexander S., Capt., 206 W. 7th St., East Liverpool.
Forman, Wiley L., Major, 370 E. Town St., Columbus.
Foy, Paul E., Capt., 115 E. Franklin, Troy.
Frommeyer, Walter B. Jr., Capt., 3526 Mooney Ave., Cincinnati.
Garvin, Gilbert E., Capt., Blanchester.
Glicklich, Earl A., Major, 3428 Burnet Ave., Cincinnati.
Hahn, Carl W., Major, 11228 Harborview Dr., Cleveland.
Hahn, Paul D., Capt., Warsaw.
Hardgrove, George L., Lt. Col., P. O. Box 13, Doylestown.
Harris, Samuel, Capt., RR 8, Cincinnati.
Hauser, Charles U., Major, 1253 Herschel Ave., Cincinnati.
Hawk, Alpha F., Capt., 442 S. Main St., Urbana.
Headley, Nathan E., Capt., 237 W. 8th Ave., Columbus.
Hepp, Herman J., Capt., RR 6, Box 26-A, Ridge Rd., Lockland.
Hertz, Harold J., Capt., 2489 Overlook Rd., Cleveland Heights.
High, Luther W., Capt., RFD 4, Millersburg.

Ohio—Continued

Hill, Myron G., Capt., 81 E. 199th St., Euclid.
Hill, Willard T., Capt., 4134 Lake Ave., Ashtabula.
Hoffman, Edward O., Capt., 321 Helen St., Cincinnati.
Horger, William J., Major, 110 Pennsylvania Ave., E. Liverpool.
Hughes, James J., Capt., 205 Wickford Rd., Columbus.
Kaufman, Karl F., Capt., 1187 Edgecliff Dr., Bedford.
Kersell, Lloyd L., Capt., 550 E. Main St., Lancaster.
Maltby, George L., Lt. Col., 212 Woolper St., Cincinnati.
Marinis, Thomas P., Capt., 405 Marion Ave., Mansfield.
Marks, Matthew O., 1st Lt., 7519 Market St., Youngstown.
Middleton, Richard H., Major, 105 Mill Creek Dr., Youngstown.
Mogg, Albert M., Capt., 264 Benita Ave., Youngstown.
Molle, Samuel A., Capt., 2460 Putnam St., Toledo.
Musta, Walter, Major, Hawthornden State Hosp., Macedonia.
Nelson, Gordon G., Major, 251 Berkshire Dr., Youngstown.
Palestrant, Munroe W., Capt., 1237 S. Ohio Ave., Columbus.
Peelle, Elias D., Major, 119 E. Locust St., Wilmington.
Petcoff, John E., 1st Lt., 2520 Monroe St., Toledo.
Pierce, Robert R., Capt., 421 South St., Alliance.
Price, Frederick F., Capt., Stony Ridge.
Price, John E., Capt., 4714 Hamilton Ave., Cincinnati.
Randell, Asher, Major, 725 Bryson St., Youngstown.
Reed, Lewis K., Major, 245 Berkshire Dr., Youngstown.
Roth, Dale E., Capt., 377 E. Main St., Newark.
Roush, Carl E., Lt. Col., 1882 Fairfax Ave., Cincinnati.
Russell, John M., Capt., 4407 Euclid Blvd., Youngstown.
Santurello, Thomas D., Lt. Col., 1059 E. Main St., Columbus.
Sauer, Richard T., Major, 2628 Benninghofen St., Hamilton.
Sawyer, Theodore D., Capt., 116 N. Thoman St., Crestline.
Schellhase, F. L., 1st Lt., 2932 Idlewood Ave., Youngstown.
Schneider, Bernard M., Capt., 11115 Ada Ave., Cleveland.
Schulze, Alfred G., Capt., Amelia.
Silver, Nathan, Capt., 820 Hutchins Ave., Cincinnati.
Skaggs, Marshall L., 1st Lt., 275 McCormick Pl., Cincinnati.
Smith, Frederick G., Major, 240 E. Church St., Marion.
Smith, I. C., Major, Home Savings & Loan Bldg., Youngstown.
Smith, William A., Major, 138 S. Diamond St., Mansfield.
Spark, Isadore, Lt. Col., Vet. Adm. Facility, Chillicothe.
Spencer, Newton C., Col., 2429 Goodard Rd., Toledo.
Stonehill, Theodore, 2214 Gould Ct., Cleveland.
Stoner, Willard C., Box 205, Chagrin Falls.
Strain, Shelley M. Jr., 227 Market St., Youngstown.
Strait, John M. Jr., 2174 Arlington Ave., Columbus.
Stubbs, Samuel P. Jr., Lima Memorial Hosp., Lima.
Surdyk, Jerome S., 2517 E. 5th St., Dayton.
Taylor, Howard P., 19493 Laurel Ave., Rocky River.
Tepe, William R., 4217 Allison St., Norwood.
Thiessen, Norman W., 610 Hanna Bldg., Cleveland.
Turner, Oscar A., 3279 Meadowbrook, Cleveland.
Wagner, Richard L., 1552 5th St., Portsmouth.
Walzer, Joseph, 3166 Redwood Rd., Cleveland Heights.
Wharton, Joseph E., 57 Franklin Ave., Athens.
Wolpaw, Ralph, 3251 Berkeley Rd., Cleveland.
Wolpaw, Sidney E., 2777 Edgehill Rd., Cleveland Heights.
Wright, Robert N., 421 N. Market, Wooster.

Oklahoma

Waters, Floyd L., Hugo.
Wilson, Charles H., 2206 W. 14th St., Oklahoma City.

Oregon

Anderson, Earl M., Col., 3236 N.E. Ainsworth, Portland.
Boals, Robert T. Jr., Capt., The Dalles Clinic, The Dalles.
Christenson, Ralph P., Capt., 1167 E. 22d St., Eugene.
Coen, Robert A., Capt., 118 N. Chadwick St., Roseburg.
Coyle, Charles L., Capt., 708 Park Ave., Medford.
Hess, Orrin R., Capt., Med. Arts Bldg., Roseburg.
Shepard, Willis B., Capt., 191 E. 19th St., Eugene.
Welch, John D., 2212 N.E. 13th Ave., Portland.

Pennsylvania

Baker, Harold F., Lt. Col., 7 S. Main St., Muncy.
Ball, Myron H., Major, 531 Clay Ave., Scranton.
Bayuk, Anthony J., Capt., 349 Darragh St., Pittsburgh.
Belknap, Harold P., Major, Wyndham Hills, RFD 6, York.
Berg, Philip Jr., Capt., 1626 Ruscomb St., Philadelphia.

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Berk, Jack E., Capt., 4639 N. 12th St., Philadelphia.
Bernstein, Alexander A., Major, 1401 Linden St., Scranton.
Burnett, George W., Major, 609 W. 1st St., Oil City.
Burns, Charles N., Major, 49 S. Washington St., Wilkes-Barre.
Buzzerd, Harry W., Major, 416 Pine St., Williamsport.
Cantor, Max, Major, 5209 Haverford Ave., Philadelphia.
Chiampi, Xavier J., Major, 930 Wyoming Ave., W. Pittston.
Cohen, Jacob J., Capt., 4855 N. 9th St., Philadelphia.
Cotter, John J., Capt., 285 W. 8th St., Wyoming.
Evans, Paul R., Capt., 901 Grand Ave., Tower City.
Fleming, William H., Major, Shelocta.
Freedman, Meyer, Capt., 748 S. 60th St., Philadelphia.
Goldman, Gilbert S., Major, 2015 Wightman St., Pittsburgh.
Heazlett, William A., Major, 721 Hill Ave., Wilkinsburg.
Heck, Harry J. Jr., Capt., 1906 Lowrie St., Pittsburgh.
Heineman, Richard W., Capt., 1066 10th Ave., Brackenridge.
Henderson, Theodore A., Major, Loch Alsh Ave., Ambler.
House, Benjamin, Capt., 6701 Castor Ave., Philadelphia.
Houser, Ben P., Capt., 214 W. Broad St., Tamaqua.
Hoyt, Ralph C., Major, 101 Wheatland Ave., Shillington.
Hughes, John C., Capt., 751 Franklin Ave., Wilkinsburg.
McConnell, Irvin W., Capt., 275 W. Louther St., Carlisle.
McCoy, Orlo G., Capt., 19 Park Pl., Corry.
McDermott, Robert W., Major, 117 22d St., Munhall.
McEvilly, James P. J., Capt., 2428 S. Alder St., Philadelphia.
MacNeal, Herbert P., Lt. Col., 726 Vernon Rd., Philadelphia.
Madigan, Thomas J., Major, 419 Emerson Ave., Aspinwall.
Meade, Richard H. Jr., Lt. Col., Miquon.
Medoff, Joseph, Capt., 5232 W. Berks St., Philadelphia.
Millard, Joseph D., Capt., 217 E. Sunbury St., Shamokin.
Miller, G. W. III, Capt., 5305 Germantown Ave., Philadelphia.
Miller, Russel F., Lt. Col., 3148 N. Broad St., Philadelphia.
Millington, John T., Capt., 34 N. Welles St., Wilkes-Barre.
Milliron, Joseph W., Capt., N. Jefferson St., Kittanning.
Moffses, Garabed H., Capt., 1216 Foulkrod St., Philadelphia.
Morrissey, George E., 1st Lt., Clinton Hotel, Philadelphia.
Nevertts, Matthew A., Capt., 30 N. Balliet St., Frackville.
Nichols, Harold, Capt., 240 Pine St., Philadelphia.
Nichols, Thomas W., Capt., 3538 Fleming Ave. N.S., Pittsburgh.
North, John P., Lt. Col., Gypsy Lane, Wynnewood.
Pellerin, Alcide D., 1st Lt., 222 Avon Rd., Upper Darby.
Ramik, Otto E., Major, RFD 3, Bellefonte.
Rogers, Arthur M., Capt., 1415 Delancey St., Philadelphia.
Rothman, Sidney, Capt., 105 E. 7th St., Lansdale.
Sabow, Ladislas T., Capt., 2821 Beechwood Blvd., Pittsburgh.
Sacks, Charles L., Capt., 347 E. Roosevelt Blvd., Philadelphia.
Sales, Phoenix M., Capt., 7914 Heather Rd., Elkins Park.
Sandhaus, Harold S., Capt., 426 W. King St., Lancaster.
Santarsiero, Donato A., Major, 228 E. Drinker St., Dunmore.
Scarf, Maxwell, Major, 1834 Pine St., Philadelphia.
Scheie, Harold G., Major, 313 S. 17th St., Philadelphia.
Schlesinger, Samuel, Major, 42 N. Wyoming St., Hazelton.
Scott, James P., Capt., Hill Crest, Philipsburg.
Sedwick, Jack D., Major, Brockway.
Shovlin, John P., Major, Farview State Hosp., Waymart.
Shubert, Roman J., Capt., 759 E. 21st St., Erie.
Smith, George S., Capt., 818 Berwick St., Easton.
Steele, L. H., Lt. Col., St. James Pl., Fox Chapel, Pittsburgh.
Steinberg, Abraam, Capt., 3419 Louisa St., Pittsburgh.
Stern, Francis H., Capt., 2421 S. 5th St., Philadelphia.
Stubbs, John J., 1381 N. Sheridan Ave., Pittsburgh.
Stutch, Reuben, 3301 Juliet St., Pittsburgh.
Testa, John W., 86½ Lambert St., Pittston.
Thomas, Henry W., 1912 Arlington Ave., Pittsburgh.
Tompkins, Harry E., 904 W. Main St., Norristown.
Walker, Cletus B., 253 Congress St., Bradford.
Wilcox, Wilfred W., 370 Broad St., Montoursville.
Wissler, Robert U., 115 Washington Ave., Ephrata.
Woodruff, Marston T., 5006 Castor Ave., Philadelphia.

Texas

Adriance, Carroll T., Capt., 1715 Broadway, Galveston.
Ashmore, Alvin J., Major, 601 Med. Prof. Bldg., Corpus Christi.
Bailey, Charles W., Capt., 2201 Bridle Path, Austin.
Bosshardt, Carl E., Major, 340 Lamont St., San Antonio.
Brin, Alfred R., Capt., 306 W. Brin Ave., Terrell.
Brindley, Hanes H., Capt., 600 W. Garfield, Temple.
Brown, C. H., Major, Wichita Falls State Hosp., Wichita Falls.

Texas—Continued

Carter, Louian C., Major, 403 Capps, Marlin.
Crain, Lovell B., Capt., 4312 Garrett St., Houston.
Creel, Wylie F., Capt., 203 North Blvd., Galveston.
Ford, Hamilton F., Major, 1510 Avenue O, Galveston.
Garrett, John C., Capt., 1220 20th St., Huntsville.
Goldston, Alton B., Capt., 2805 Hayden St., Amarillo.
Goodwin, Francis C., Lt. Col., 925 Rim Rd., El Paso.
Heard, Jesse G., Lt. Col., 3059 Reba Dr., Houston.
Herndon, Charles H., Capt., Dublin.
Holshouser, Charles A., Major, 226 W. Gramercy, San Antonio.
Hood, John G., Lt. Col., Vet. Adm. Hosp., Amarillo.
Hyslop, James R., Major, 317 E. Yandell St., El Paso.
Jordan, Gerald H., Major, 4517 Cumberland, El Paso.
Koberg, Frederick J., Major, 710 Runnels St., Big Spring.
McComb, Asher R., Major, 415 Casino Club Bldg., San Antonio.
McReynolds, Issac S., Major, 2247 Bartlett St., Houston.
Maxfield, Jack G. S., Major, 1700 Morrow St., Waco.
Mewhinney, Logan U., Capt., Holland.
Mondrick, Frank V., Capt., Marshall.
Nicholson, William D., Capt., Rosebud.
Nickerson, Samuel H., Lt. Col., 831 S.E. 12th St., Paris.
Portman, Robert K., Capt., 1025 Haines St., Dallas.
Robbins, Jacob B., Major, 408 Blacker St., El Paso.
Scarborough, Lee F., Capt., Rusk.
Shields, Thomas L., Major, 2508 Shelby St., Apt. 2, Dallas.
Simms, Otho M., Capt., Normangee.
Small, Andrew B., Major, 4128 McFarlin Blvd., Dallas.
Stiles, Wendell A., Major, 3218 Bryn Mawr, Dallas.
Swan, Joseph J., 4728 Dexter, Fort Worth.
Terrell, Charles J., 813 Medical Arts Bldg., Fort Worth.
Trevino, Saul S., 2811 Buena Vista, San Antonio.
Tuck, Vernon L., 902 S. Travis St., Sherman.
Tumbleson, Talbot, 705 5th St., Beaumont.
Turboff, Sidney W., 4315 Siegel St., Houston.
Wertz, Royal F., 1315 Broadmoor St., Amarillo.
Williams, William H. Jr., 602 Meander, Abilene.
Williams, William O., 1601 Sul Ross Ave., Houston.
Williamson, Lee, 109 Johnson, Terrell.
Winstead, Dabney E., 712 Brazos, Graham.
Witcher, Seth L., Clifton.
Wood, Joe B., 521 College St., Sulphur Springs.
Wright, John L. Jr., 20 E. Avenue H, San Angelo.

Washington

Turley, Gerald W., Box 357, Goldendale.
Webster, Bruce J., Box 485, Omak.

West Virginia

Thornton, Jack T. Jr., Woodale, Wheeling.
Wilson, Paul R., 111 Ashfield St., Piedmont.

Wisconsin

Thayer, Richard A., 1306 Chapin St., Beloit.
Wegmann, George H., 2960 N. 70th, Milwaukee.
Weissmiller, Lester L., 221 Clifford Ct., Madison.

Wyoming

Stratton, Richard C., Green River.

Puerto Rico

Babb, Donald F., Capt., 3 Duarte St., Stop 20, Santurce.

Canada

Bryan, William W., Lt. Col., London, Ontario.

RECALLED TO ACTIVE DUTY OR NOT RELIEVED

Croll, Leo J., Major, 18605 Fairfield, Detroit.
Drisoll, Robert H., Col., 915 Glenn St., Newberry, S. C.
Gordon, Hirsch L., Capt., Veterans Hosp., Northport, N. Y.
Krichbaum, C. E., Lt. Col., 63 Myrtle Ave., Montclair, N. J.
Murphy, James H., Capt., High St., Curwensville, Pa.
Schwartz, Edward D., 1st Lt., 1720 Middlehurst Rd., Cleveland Heights, Ohio.

ORGANIZATION SECTION

National Health Program

PLATFORM ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION

One of the ten points in this platform will be published each week.

9. The services rendered by volunteer philanthropic health agencies such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

Washington Letter

(From a Special Correspondent)

June 3, 1946.

Poliomyelitis Funds Appropriated for Public Health Personnel

Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, and Basil O'Connor, president of the National Foundation for Infantile Paralysis, announced that $278,400 of infantile paralysis funds will be used for the training of public health personnel. Dr. Parran said that $228,400 of the appropriation would provide fellowships for recruits to meet the need for 1,200 physicians and sanitary engineers in state and local health departments. "We believe," he explained, "that the conduct of successful programs of control and alleviation of poliomyelitis will be aided materially by the presence in health departments of well trained health officers and sanitary engineers."

Veteran Patients to Share in Community Activities

Patients in Veterans Administration hospitals will be able to take active part in the life of the communities where their hospitals are located. The Special Services Division of the agency said the plan has been adopted to help restore the confidence of sick patients through normal association with the civilian population. The plan will bring to the hospitals recreational and entertainment programs, informal visits, assistance in letter writing and shopping and other services. Patients will take part in civic and social activities of the communities.

Navy Nurses Would Retain Wartime Ranks

Legislation is now before Congress which would permit navy nurses to retain permanently commission rank which Congress granted to them for the duration and six months. The Navy Nurse Corps was credited on its thirty-eighth anniversary by Secretary of the Navy James Forrestal with "a substantial share of credit for the Navy's low death rate of casualties." Capt. Nellie Jane DeWitt is superintendent of the corps, which has 7,500 members.

Veterans Warned of Continuing Danger of Syphilis

Dr. Donald M. Pillsbury, chief of the Veterans Administration medical section on dermatology and syphilis, advised the 400,000 men who contracted syphilis in the armed forces during the war to visit their own doctors or public clinics to make sure that they had been cured. He described the disease as the "most serious long term medical problem" continuing from the war. He estimated that between 80 and 90 per cent had been cured but warned of the danger of relapse without adequate treatment and periodic checkups.

Magicians Help Fund for Nurses Memorial

Some 500 members of the Society of American Magicians will help raise funds for the war memorial in Washington for Nurses of the Armed Forces. The magicians will stage a performance in Constitution Hall on May 31 during their annual convention in Washington, and the proceeds will go toward the nurses' memorial. Mrs. Norman Kirk is heading the memorial campaign.

Hospital Supplies Endangered by Strikes

The railway strike, which was terminated after President Truman appealed to a joint session of Congress for strike control legislation, threatened fresh food supplies of District of Columbia hospitals whose patients require a high protein diet. Other hospital supplies such as medicine, x-ray equipment and bandages were reported adequate for three weeks.

Congressional Approval of Mental Institute Expected

The Senate Education and Labor Committee has approved and forwarded to the Senate floor the bill advocating a new mental health research institute at Bethesda, Md. A similar bill passed the house last March, increasing the amount available for building the institute from 4.5 to 10 million dollars.

Anti-Vice Legislation Made Permanent

President Truman has signed legislation making permanent the wartime regulations prohibiting prostitution in the vicinity of military and naval establishments.

Bureau of Information

Of the several thousand medical officers who have consulted the Bureau of Information for areas needing physicians, few are inclined to establish themselves in areas where there are inadequate hospital facilities or where the community may be financially unable to support a doctor. Realizing that the needs of these areas must be carefully evaluated, the House of Delegates during its meeting in December 1945 suggested that each state medical society should be urged to establish an information service. This state office should at all times be in a position to furnish information concerning areas in need of physicians and a complete picture of the medical facilities and the physical and economic aspects of any community within the state. The Bureau of Information should also, by the establishment of a cooperative monthly reporting system with state societies, be kept informed of areas needing physicians and from time to time seek information, either directly or through state medical societies, from individual physicians concerning location, type of practice and other relative data.

Dr. Robert Anderson of Texas, chairman of the Advisory Council to the Bureau of Information, has already sent to each state office a copy of a directive that the Texas State Medical Association sent to the county societies urging the appointment of county committees to survey regarding the present medical and hospital situation in each county and requesting the opinion of the committee regarding the need of any additional physicians or hospitals. The Texas Association brought out in its letter to the county societies that no other subject is more important to the preservation of the independent practice of medicine in the state. The state association must know on a statewide basis what is needed to be certain that all the people of the state have adequate medical and hospital facilities and be able to support its contentions in that regard with accurate facts and figures, carefully and thoughtfully assembled by those qualified to advise in local areas throughout the state. As soon as the Texas Association receives these county reports, Dr. Anderson forwards a copy for the files of the Bureau of Information at the headquarters office of the American Medical Association. If this procedure

is followed in each state we shall have at all times at the central office accurate data regarding the medical care situation in each state so that studies can be made for the country as a whole.

Official Notes

TELEVISION PROGRAMS

The Bureau of Health Education announces changes and additional titles in the experimental pioneer telecasts over television station WKBK, Chicago, which began April 2 and which are believed to be the first telecasts sponsored by organized medicine.

Owing to the power curtailment during the coal strike, television stations were shut down. The following schedule supersedes any previously published announcements:

June 20. Contagious disease precautions in the home.
Dr. W. W. Bauer.
July 4. No telecast.
July 18. Methods for administering drugs.
Dr. Austin E. Smith.
August 1. Strange medical fakes.
Thomas G. Hull, Ph.D.
August 15. Anesthesia.
Telecaster to be announced.

The programs are being telecast on a sustaining basis; that is, the station will derive no revenue. Credit will be given on the program to Chicago medical supply firms which lend apparatus for demonstration, but there will be no other advertising. Scripts will be prepared in cooperation with each medical demonstrator and coordinated by the Bureau of Health Education. Dr. W. W. Bauer will summarize the odd numbered programs and Dr. William W. Bolton the even numbered programs.

Medical Legislation

STATE LEGISLATION

Louisiana

Bill Introduced.—H. 264, relating to the taxing powers of municipalities throughout the state, proposes to authorize, among other things, the power to levy and collect a license tax on and regulate all professions and occupations conducted within the limits of a municipality.

Massachusetts

Bill Introduced.—H. 1898 proposes the creation of a board of registration of opticians and defines an optician as "a person engaged in the filling, compounding or reproducing of prescriptions of physicians or optometrists for ophthalmic lenses, eyeglasses or other optical appliances prescribed for the correction of defective vision or ocular anomalies of the human eye, and the mounting and fitting of the same to frames or supporting materials, and the adjusting of such lenses, eyeglasses and appliances to the use of the wearer." Exempted from this proposal would be licensed physicians and optometrists.

Bill Passed.—H. 1922 passed the house May 10. To amend the law relative to the regulation of hospitals, it proposes to authorize the department of public health to license persons desiring to establish or maintain a hospital, sanatorium, convalescent home or nursing home. A hospital or sanatorium is defined by the proposal to be an institution, however named, whether conducted for charity or for profit, which is advertised, announced or maintained for the express or implied purpose of caring for persons admitted thereto for purposes of diagnosis or medical or surgical treatment which is rendered within said institution, except an institution caring exclusively for cases of mental diseases and licensed by or under the general supervision of the department of mental health. A convalescent home or nursing home would be defined as an institution, however named, whether conducted for charity or profit, which is advertised, announced or maintained for the express or implied purpose of caring for three or more persons, not acutely ill, admitted thereto for the purpose of chronic or convalescent care.

Bills Enacted.—H. 230 has become chapter 365 of the Laws of 1946. It amends the medical practice act by authorizing the board of medical examiners to grant certificates of registration, without examination, to such persons as shall furnish with their applications satisfactory proof that they have the qualifications required in Massachusetts to entitle them to be examined and have been licensed or registered on a written examination in another state whose standards, in the opinion of the board, are equivalent to those in Massachusetts. The law also provides that no person shall be registered without an examination if he is a graduate of a medical school not approved by the approving authority. H. 1749 has become chapter 364 of the Laws of 1946. It provides that the College of Physicians and Surgeons, a Massachusetts corporation duly organized and established in 1880, be dissolved.

Missouri

Bills Enacted.—H. 830 was approved May 17, 1946. It authorizes county courts to promulgate such rules, regulations or ordinances as will tend to enhance the public health and prevent the entrance of infectious, contagious, communicable or dangerous diseases into such county. H. 912 was approved May 24, 1946. It authorizes the county court of any county to levy an annual tax for the purpose of operating or maintaining a public county hospital within the county.

Coming Medical Meetings

American Medical Association, San Francisco, July 1-5. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Tuberculosis Physicians, San Francisco, June 30. Dr. Oscar S. Levin, P. O. Box 7011, Denver 6, Colo., Secretary.

American Association for the Study of Goiter, Chicago, June 20-23. Dr. Thomas C. Davison, 478 Peachtree St., N.E., Atlanta 3, Ga., Secretary.

American Association for the Surgery of Trauma, San Antonio, Texas, June 26-28. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 20-22. Dr. Charles C. Higgins, 2020 E. 93d St., Cleveland 6, Secretary.

American College of Allergists, San Francisco, June 28-30. Dr. Fred W. Wittich, 401 LaSalle Medical Bldg., Minneapolis 2, Secretary.

American College of Chest Physicians, San Francisco, June 27-30. Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10, Executive Secretary.

American College of Radiology, San Francisco, June 29. Mr. Mac F. Cahal, 20 N. Wacker Drive, Chicago 6, Secretary.

American Dermatological Association, Hot Springs, Va., June 10-14. Dr. Harry R. Foerster, 208 E. Wisconsin Ave., Milwaukee, Secretary.

American Medical Women's Association, San Francisco, June 29-30. Dr. Beulah Cushman, 25 E. Washington St., Chicago, Secretary.

American Neurological Association, San Francisco, June 26-28. Dr. Henry Alsop Riley, 117 E. 72d St., New York 21, Secretary.

American Ophthalmological Society, San Francisco, June 26-28. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Orthopedic Association, Hot Springs, Va., June 27-29. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit 2, Secretary.

American Physiotherapy Association, Black Mountain, N. C., June 16-22. Miss Margaret A. O'Neill, 1790 Broadway, New York 19, Secretary.

American Proctologic Society, San Francisco, June 30. Dr. Harry E. Bacon, 2031 Locust St., Philadelphia 3, Secretary.

American Radium Society, San Francisco, June 28-29. Dr. Edward H. Skinner, 1103 Grand Ave., Kansas City 6, Mo., Secretary.

American Society of Clinical Pathologists, San Francisco, June 27-30. Dr. A. S. Giordano, 531 N. Main St., South Bend, Ind., Secretary.

American Urological Association, Cincinnati, July 22-25. Dr. Thomas D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Association for the Study of Internal Secretions, San Francisco, June 28-29. Dr. Henry H. Turner, 1200 N. Walker St., Oklahoma City, Secretary.

Idaho State Medical Association, Boise, June 17-20. Dr. F. B. Jeppesen, 105 N. 8th St., Boise, Secretary.

Maine Medical Association, Poland Spring, June 23-25. Dr. Frederick R. Carter, 142 High Street, Portland 3, Secretary.

Montana, Medical Association of, Great Falls, July 18-20. Dr. Raymond F. Peterson, 9 W. Granite St., Butte, Secretary.

National Gastroenterological Association, New York, June 19-21. Dr. G. Randolph Manning, 819 Broadway, New York 23, Secretary.

National Tuberculosis Association, Buffalo, N. Y., June 11-13. Dr. Charles J. Hatfield, 1790 Broadway, New York 19, Secretary.

Society for Investigative Dermatology, San Francisco, June 30. Dr. S. William Becker, 55 E. Washington St., Chicago 2, Secretary.

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(NOTE.—*This is a condensation of the verbatim report of the hearings.*—ED.)

(Continued from page 469)

United States Senate, Committee on Education and Labor.

APRIL 23, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Ellender and Donnell.

Statement of Dr. John P. Peters, Secretary, Committee of Physicians for Improvement of Medical Care

DR. PETERS: In order to save the time of the senatorial committee I should like to present for incorporation in the record of these hearings the official statement of the Committee of Physicians dealing with the bill S. 1606, together with their statement about the previous bill, S. 1050. The Committee of Physicians has consistently opposed the fee-for-service method of payment in public medical care programs because it engenders abuses, is not conducive to economy and does not promote cooperative effort. If this were allowed to become the chief or sole method of payment, existing groups and teaching hospitals would be threatened and the further formation of groups would be halted. The immediate and complete elimination of fee-for-service payment, on the other hand, would involve a revolution of the existing system of practice that might delay the development of the program. The general principles on which this controversial matter is treated in title II have been wisely conceived.

(*Senator Donnell brought out that Dr. Peters is a full time salaried physician.*)

SENATOR DONNELL: You are appearing, I understand, on behalf of the Committee of Physicians for the Improvement of Medical Care. DR. PETERS: Yes.

SENATOR DONNELL: How large a committee is that? DR. PETERS: The committee itself is about fifty.

SENATOR DONNELL: Doctor, do you know of any organizations of physicians except the Physicians Forum and the committee for which you speak today who favor officially the enactment of S. 1606 into law? DR. PETERS: Yes. There are several small ones. There is a group of physicians organized under the Independent Citizens Committee of the Arts, Sciences and Professions, and there are several other smaller groups. One in Hollywood; that, by the way, is a branch of the Independent Citizens group. There is a small one in St. Louis, the committee of Physicians for the Study of Medical Care. I cannot identify many of them. I have a great many requests from them in correspondence continually for information from our committee.

SENATOR MURRAY: Do you know of many individual physicians and surgeons who do not belong to any particular group who recognize the need of legislation? DR. PETERS: There is an enormous number of them, especially among the young men. I would like to call attention to and put on the record the vote taken by the New York County Medical Society yesterday that shows at least there is a large minority favoring legislation. The vote was 503 against the Wagner-Murray-Dingell bill for compulsory health insurance and 152 for it. That at least is not a negligibile minority, and when you consider that, besides, the younger men and a great many of the older men are afraid to express themselves, you may enlarge that minority considerably.

SENATOR DONNELL: As I figured hastily the vote that you refer to, 500 against and 152 for, it means that approximately 76 per cent of those voting in New York County Association were against the enactment of S. 1606. Is that right? DR. PETERS: I think it is significant when you ask whether there are individual physicians or groups of them that you have at the present time, after all the propaganda that has been brought about, practically 25 per cent in a medical association of that kind who can stand up and vote for the Murray-Wagner-Dingell bill.

SENATOR DONNELL: In your statement No. 15, Doctor, that is the one that is filed here under that number, there appears on page 2 the statement "Compulsory insurance bills have been presented to the Congress of the United States and numerous state legislatures. The popular demand for legislation of this nature is steadily increasing." Would you tell us, please, is there any state legislature in the United States to your knowledge that has thus far enacted any legislation providing for compulsory health insurance? DR. PETERS: Not unless they have done it very recently.

SENATOR DONNELL: Do you favor a revolution in the method of practice personally? DR. PETERS: I think it must be changed if we are going to have the quality of care we require. And I think the fact that medicine is more and more gravitating toward hospitals is one indication that we will have it.

SENATOR DONNELL: I asked you a little while ago, and I know you said you could not tell us, the aggregate number of associations which have affirmatively approved compulsory health insurance. Would you say that in your judgment it would run as high as 10,000? DR. PETERS: Well, what kind of organization?

SENATOR DONNELL: I should have qualified that. I meant any organizations of physicians or surgeons or both, would there be as many? I will put it this way: Are there associations of physicians and surgeons in this country, including the Physicians Forum and your own committee, and any others, are there such organizations the aggregate of membership of which would in your opinion be as great as 10,000 who have expressed themselves by official action as favoring compulsory health insurance in this country? DR. PETERS: My opinion is that there would be that many.

SENATOR DONNELL: That there would be that many? DR. PETERS: In my opinion, and it is only an opinion, and therefore I do not know just how much it is worth. I will say this, that at the end of these hearings I hope we will have a better basis for opinion.

SENATOR DONNELL: The Physicians Forum, as I recall it, and I may be in error in this, has 2,000 or 2,500 members, somewhere in there, possibly even less than that. Is that correct? DR. PETERS: I do not know.

SENATOR DONNELL: Are you a member of that organization? DR. PETERS: I am not a member of that organization.

SENATOR DONNELL: At any rate, the testimony of Dr. Boas tells us the membership, whatever it may be. SENATOR ELLENDER: If you will permit me, there were a thousand in that.

SENATOR DONNELL: Senator Ellender calls my attention to the fact that there were only one thousand.

SENATOR ELLENDER: Six hundred and some odd came out of New York and the rest are scattered throughout the country.

SENATOR DONNELL: I remember that very distinctly, and I thank you for mentioning that. Do you know of any other organization of physicians and surgeons that you can give us the name of here this morning, other than the Physicians Forum or the Committee of Physicians for the Improvement of Medical Care, which have taken any official action favorable to compulsory health insurance in this country? DR. PETERS: Yes, but they are very small.

SENATOR DONNELL: Could you give us their names? DR. PETERS: The Committee of House Physicians for the Study of House Care.

SENATOR DONNELL: That is the one that you are here appearing for? DR. PETERS: House Physicians.

SENATOR DONNELL: How large an organization is that? DR. PETERS: I do not know at the present time. It is a very small one.

SENATOR DONNELL: A thousand? DR. PETERS: Oh, no.

SENATOR DONNELL: A hundred? DR. PETERS: I do not think so.

SENATOR DONNELL: Less than a hundred, you think; that is the Committee of House Physicians. What is the next one? By the way, where is that committee located? DR. PETERS: In St. Louis.

SENATOR DONNELL: Who is the head of that? DR. PETERS: Richard M. Peters.

SENATOR DONNELL: Is he related to you? DR. PETERS: Yes.

SENATOR DONNELL: What relationship? DR. PETERS: My son.

SENATOR DONNELL: And when was it organized? DR. PETERS: It is less than a year ago.

SENATOR DONNELL: Was it organized to advocate the passage of legislation of this kind? DR. PETERS: It was organized as a study group first. You asked for all the organizations I know, and it is a small group of house physicians that is expanding, and I do not think it is of great significance except to show the spirit among the younger men. On the other hand, there are not organizations of that age group. They are not possible, any more than there are among the veterans groups and the other younger men.

SENATOR DONNELL: And that is that organization. We have then the Physicians Forum and this committee for which you appear, the Forum constituted of a thousand members, as Senator Ellender points out, 600 of whom are in New York State, and your organization that you appear for here this morning, with about 50 members, or I should say 1,500 who are in a sense associates, but the 50 is the active committee, is that right? DR. PETERS: Yes.

SENATOR DONNELL: So we have those two organizations. We will count that as 1,500 for your committee, so as to be perfectly fair on it. Then the House Physicians have a maximum of 100. What other organizations of physicians or surgeons in this country have passed official action favorable to compulsory health insurance? DR. PETERS: It is not really an association of physicians and surgeons; there is a council, medical council, and a large medical group or division in the Independent Citizens Committee which has favored it.

SENATOR DONNELL: Where? DR. PETERS: In the Arts and Sciences branch of the Independent Citizens Committee of the Arts, Sciences and Professions.

SENATOR DONNELL: That is the one of which Mr. Ickes is head? DR. PETERS: Yes.

SENATOR DONNELL: I remember Frank Sinatra is in that. He is not a physician. DR. PETERS: No, I say within that there is a division of physicians.

SENATOR DONNELL: Yes. I did not mean any reflection on Mr. Sinatra in the slightest. Undoubtedly a man of great capacity in his profession, but he is not a physician is what I am getting at. DR. PETERS: But there is a large group of physicians in their organized division.

SENATOR DONNELL: How many are there? DR. PETERS: You would have to inquire from the offices there.

SENATOR DONNELL: My recollection, Doctor, subject of course to correction by either of these other gentlemen, is that the testimony of Dr. Butler or Mr. Ickes, one or the other, is about 200; one of them had seen them coming together in a meeting. Do you know whether there is a larger number of doctors than that? DR. PETERS: There are more than that.

SENATOR DONNELL: Are there 500? DR. PETERS: I would have to get the figures from New York.

SENATOR DONNELL: Do you think there are as many as 500 in that committee of doctors, I should say? DR. PETERS: I should suspect that.

SENATOR DONNELL: You think that is a fair figure, an estimate of 500? DR. PETERS: Yes.

SENATOR DONNELL: That is what we call the organization represented here by Mr. Ickes the other day. What other organization in this country that you know of of physicians or surgeons has given official sanction to compulsory health insurance? DR. PETERS: I do not know of any.

SENATOR DONNELL: You do not know of any others? Dr. Peters, taking your figure, first, the figure of 1,000 for the Physicians Forum, taking your own organization at 1,500, which I think is perfectly liberal, because the active, as I understand it more or less active, membership is much smaller, that is right, is it not? DR. PETERS: It has to be in any organization. You cannot make 1,500 write a statement.

SENATOR DONNELL: The actual operating membership of your organization is only about 50, but I want to ask you what the other 1,450 do, which will come to that as an organization. But taking your organization as 1,500, the Forum so many, the House of Physicians of which your son is the head, and the medical components that enter into this organization of which Mr. Ickes is the head, 500, we get a total of 3,100. That of course counts yours at 1,500. But let me ask you about the 1,450 in your organization who are not included in this committee of 50. What do they do in connection with the affairs of your organization? DR. PETERS: They subscribe to our principles. That is not the end of our mailing list. I am talking about the physicians in there. They subscribe to our principles and have asked for and receive the letters.

SENATOR DONNELL: Are those 1,500 physicians? DR. PETERS: I cannot say whether somewhere between 1,400 and 1,500 at the present time. We are at a loss in two respects. One, we are getting new members, and the other is that servicemen are turning up that we thought were lost, and we cannot absolutely be sure what our list of servicemen is, but it is between 1,400 and 1,500.

SENATOR DONNELL: And do those 1,400 to 1,500 men come together in annual convention? DR. PETERS: No.

SENATOR DONNELL: Your convention consists of about 50; is that right, sir? DR. PETERS: Yes.

SENATOR DONNELL: And that is the committee, generally speaking, the names of whom are on this letterhead? DR. PETERS: That is the committee.

SENATOR DONNELL: Doctor, do these 1,400 or 1,500 people participate in committee memberships of your organization, or do they just subscribe and get the benefit of information? DR. PETERS: There is not any subscription.

SENATOR DONNELL: How do they join? DR. PETERS: They ask to join and state that they would support us and are interested in furthering our work.

SENATOR DONNELL: Have you taken any poll of those people to see whether or not they approve statements 16, 15 and the other statement which has been filed here? DR. PETERS: Except that we send them out and ask for their criticism.

SENATOR DONNELL: Have you taken a poll of them to see whether they approve it? DR. PETERS: No.

Statement of Dr. Carl O. Flagstad, Chairman, Legislative Committee, American Dental Association, Accompanied by Dr. Allen O. Gruebbel, Secretary of the Council on Dental Health, American Dental Association; Dr. Harold Hillenbrand, Editor of the Journal of The American Dental Association, and Mr. George H. Fox, General Counsel of the American Dental Association and Secretary of the Committee on Legislation of the American Dental Association.

DR. FLAGSTAD: I am Dr. Carl O. Flagstad of Minneapolis, chairman of the Committee on Legislation of the American Dental Association. I have been engaged in private dental practice for thirty-five years and am a professor and chairman of the Division of Prosthetic Dentistry at the University of Minnesota. The American Dental Association, whose headquarters are in Chicago, has a membership of 56,000 dentists. This represents more than two thirds of the 75,000 dentists registered in the United States. The Committee on Legislation, of which I am chairman, has its members elected by the House of Delegates and we serve without personal remuneration. This democratic pattern of organization with extensive membership in every state of the Union unquestionably gives the American Dental Association the right to voice the opinion of the great majority of dentists in the United States.

In legislation of the type of S. 1606 there has been a tendency to include dental practice and treatment under the categorical head of "medical service." It is true that close cooperation between dental and medical practitioners exists in routine and special practice, but it does not follow that the needs and program of the two professions are identical. There are some specific facts about dental disease and dental practice which must be taken into consideration before an intelligent and long-range program can be planned:

1. Dentistry must include in its program provisions for treating a disease that is almost universal. It is almost axiomatic that 95 per cent of our population suffer from dental diseases at some point or other in life and that an extremely high percentage need annual dental care.

2. Because of the extremely high prevalence of untreated dental defects, it is impossible to apply the insurance principle.

3. The real causes of the chief dental diseases, dental caries and periodontoclasia, are not entirely known, so it is impossible to prevent them in the true sense of the word by attacking the cause. The best methods of control that are known to date are early and regular dental treatment.

4. If such early dental treatment is not sought, the ensuing dental neglect becomes much more costly than timely dental treatment.

5. If early and regular dental treatment can be given to children, it will assure a definite lowering of serious dental defects later in life and the production of a generation of adults comparatively free from the accumulated defects caused by early neglect.

6. The cost of providing such essential dental service for children is, according to present estimates, less than one-half the cost of providing essential dental service for adults.

7. Since many people do not seek dental care until great damage has occurred, it is absolutely essential to maintain a continuing program of dental health education to inform all of the importance of dental health and to motivate them to secure dental care.

8. Because of the limited number of dentists, it is impossible to carry out any program that promises complete dental care to both children and adults.

9. In the face of this dental personnel problem, it is obvious that the most efficient use should be made of the present number of dentists. It is the opinion of competent dental authorities that in public dental health programs the most efficient use of available dental services is to devote all needed attention to dental disease in children and provide additionally as much service as possible for adults.

10. One of the reasons for dental neglect besides those already mentioned is that the prevention and control of dental diseases have never been given continuing financial support by either public or private agencies.

All these factors are brought to your attention to demonstrate that legislation, even if it may be well designed to meet medical problems and conditions, is not necessarily as well adapted to meet dental problems which are quite different in nature. The attitude of the American Dental Association toward the current bill, S. 1606, is based largely on the fact that it does not take into sufficient account the unique complex problem of providing adequate dental care.

The American Dental Association is opposed to the enactment of S. 1606 because:

1. The American Dental Association believes that compulsory health insurance for a majority of the population should not be established in this country without preliminary scientific experimentation involving less extensive groups of the population.

2. The American Dental Association believes that it is unsound administration to disperse responsibility for health among the three agencies mentioned by the bill: the U. S. Public Health Service, the Children's Bureau of the Department of Labor and the Social Security Board.

3. The American Dental Association believes that a compulsory health insurance system, basically similar to the systems in effect in foreign countries, should not be established on a national basis until there is incontrovertible evidence that the American pattern is an improvement and that the errors of the foreign systems will not be perpetuated in the American program.

4. The American Dental Association believes that a program the size of the one proposed should not be established without directly facing the problem of expense. This expense should be clearly enunciated in terms of both cost to the individual and cost to the nation.

5. The American Dental Association believes that the grants-in-aid system has been effective in meeting certain health needs under the Social Security Act. The American Dental Association believes that this system should be enlarged to meet all health needs and that there is no necessity for enacting a national compulsory prepayment plan.

6. The American Dental Association believes that the right of a state to determine the methods of meeting its health needs should not be taken away.

7. The American Dental Association believes that a program as comprehensive as the one proposed should not be designed without seeking the official cooperation of all agencies and professions involved.

S. 1606 proposes to make emergency dental care available to larger groups of the population. This proposal involves a false concept in public dental health practice because, if only emergency dental treatment is given, the problem of dental disease will be as great ten or fifty years from now as it is today. In contrast to this uneconomic and unscientific approach, the dental profession of this country supports the view that the problem can be solved through a coordinated program of disease prevention and dental care for children. The reasons behind this belief are realistic and practical. If we cannot prevent the occurrence of dental disease, we must concentrate our efforts on dental research. If we cannot provide services to all persons (which is obviously the case) the benefits of the plan must be limited to the age groups in which dental disease begins.

S. 1606 provides that dental benefits shall have such restricted content as the Surgeon General may determine: "provided, that on and after July 1, 1947, the restricted content of general dental or special dental benefit shall include at least (1) examination (including x-ray survey) and diagnosis; (2) prophylaxis; (3) extraction of teeth which are considered by the dentist and an attending physician to be or likely to be injurious to the general health of the individual; and (4) treatment of acute diseases of the teeth, their supporting structures and adjacent parts, including fractures of the teeth or jaws."

Contrast this limited, emergency type of program in S. 1606 with that proposed by the Council on Dental Health for the 12-18 year age group:

1. Examination using posterior bitewing roentgenograms at least once a year and other roentgenograms as may be needed.

2. Prophylaxis at intervals depending on patient need and susceptibility.

3. Restoration of carious teeth with silver amalgam, silicate cement and gold.

4. Pulp treatments including pulp capping, pulpectomy of vital exposed pulps and treatment of putrescent teeth in young patients.

5. Restoration and appliances including prosthetic restorations to replace missing teeth and appliances to maintain space so as to prevent malocclusion.

6. Treatment of mouth infection.

7. Extraction of infected teeth, supernumerary teeth and impacted teeth, using local or general anesthesia.

8. Surgery as may be necessary to maintain health, including, if necessary, root resection of infected permanent teeth.

9. Health education of the patient.

Authorities in the field of dentistry have agreed after a careful study that the services listed would be considered minimum services for the protection and maintenance of dental health. Any amount less than that would be inconsistent with modern dental practice.

The vast difference in dental benefits of the two proposals emphasizes again the need for technical advice in planning health legislation. Such advice obviously was not sought or taken into account in drafting the dental provisions of S. 1606.

There are other valid reasons for seriously questioning the dental benefits in the proposed legislation. S. 1606 provides, for example, that every insured person will be entitled to receive "treatment of acute diseases of the teeth . . ." A careful reading of the bill does not disclose what is meant by the term "acute diseases of the teeth." If dental decay is an "acute disease" of the teeth, and many authorities believe that it should be so classified, then the bill promises that all types of dental procedures for treating diseased teeth would be included in the plan, and only prosthetic dentistry would be excluded. Under this provision the American people would not know the amount of dental health service to which they would be entitled. Such vague and indefinite wordings constitute a basic objection to the proposal.

The American Dental Association also wishes to raise another objection to the dental provisions of S. 1606. Experience in foreign countries reveals that effective dental health programs have not been developed under the compulsory health insurance system.

The following short quotations are taken from the report of an official committee of Parliament appointed to study the British dental program: "Roughly, two thirds of the insured population, that is between 13 and 14 million people, are entitled to dental benefit, but only 800,000 (less than 7 per cent) of these claim it on an average each year." It is the contention of the American Dental Association that there is something intrinsically wrong with a program which compels 13 or 14 million people to contribute for a service which only 800,000 receive.

Another quotation from the committee's report: "The state of the dental health of our population is bad and its effect on their general health is bad." The American Dental Association does not believe that any program which must make such an admission after several decades of existence gives any indication that it will aid in rearing a generation of adults less afflicted with dental disease.

Perhaps it might be impressive to add the general opinion expressed by our veterans of the Dental Corps stationed in England during the war. Their opinion is "The Dental health of the people of England is very poor and so is their dentistry."

The American Dental Association would be reluctant to end its testimony with mere opposition to the proposal that is now before this committee. So intense have been the interest and activity of the American Dental Association in this great problem of better dental health for our people that it has sponsored two measures which are also pending before this very committee: S. 190 and S. 1099. These bills provide, as has been stated, federal grants-in-aid for intensified dental research and experimental programs in all phases of dental health education and care.

Statement of Dr. Maurice Kaufman, Accompanied By Seymour J. Schoenfeld, Secretary, Dentists Committee for the Passage of the Wagner-Murray-Dingell Bill

DR. KAUFMAN: I am Dr. Maurice Kaufman. I represent the Dentists Committee for the Passage of the Wagner-Murray-Lingell bill.

The Dentists Committee for the Passage of the Wagner-Murray-Dingell bill is a very new organization. It was formed out of necessity. Owing to the stifling of democratic procedure within the American Dental Association, there was no other way to give public notice to proponents of the bill. This new committee is composed exclusively of members of the American Dental Association and is supported entirely by contributions of dentists. The chairman of the committee is Dr. John Oppie McCall, who is also director of the Murray and Leonie Guggenheim Dental Clinic of New York City. Among our sponsors are men who have held the most honored and trusted positions in the American Dental Association and its components. We favor the Wagner-Murray-Dingell bill, S. 1606, because it provides a much needed and wide coverage of essential health care to the American people. It links dental care with health care, which in our opinion is its proper orientation. The bill is not socialized medicine, retains free choice and protects the dentist with assurance of adequate compensation. It provides incentive for dentists and protects the public against threat of deterioration of service. The Dentist Committee for the Passage of the Wagner-Murray-Dingell bill fully supports this proposed legislation.

APRIL 24, 1946

HONORABLE CLAUDE PEPPER Presiding

PRESENT: Senators Murray, Pepper, Smith and Donnell.

Statement of Katharine J. Densford, R.N., President, American Nurses' Association

MISS DENSFORD: My name is Katharine J. Densford, director of the School of Nursing in the University of Minnesota and President of the American Nurses' Association. The opinions which I am about to express do not necessarily reflect my personal views but are the opinions of the association as made known through boards of directors and other representatives of state nurses' associations. The house of delegates of the American Nurses' Association on June 7, 1944 adopted a recommendation which favors "the expansion of health insurance plans and providing for nursing service including nursing care in the home. It is believed that, in addition to voluntary effort, governmental assistance is necessary for attaining adequate distribution of health services." In order to secure definite action regarding specific legislation on the subject of a national health program now pending before Congress, it would be necessary to present the matter to the American Nurses' Association house of delegates which will convene Sept. 23, 1946. The American Nurses' Association has made continuous study of all proposed legislation dealing with such matters and has through its official publication, the *American Journal of Nursing*, and otherwise, kept its constituent associations and members abreast of developments. No program of health care or of health insurance, whether voluntary or compulsory, can be considered complete unless the program includes necessary nursing care. Any such program should contain provisions adequate to insure that the nursing services rendered will be of high professional quality. If a federal health insurance program is adopted, the administrator, namely the Surgeon General of the United States Public Health Service, should of course, be a duly licensed physician, and the program relating to nursing service and nursing education should be administered through federal and state councils composed predominantly of qualified graduate registered professional nurses.

Attached hereto are statements which are being filed by the National League of Nursing Education and the National Organization for Public Health Nursing.

. . . . . .

SENATOR SMITH: Just one question. Miss Densford, does this imply that you are supporting the compulsory health insurance plan, compulsory contributions? MISS DENSFORD: Mr. Chairman, before Senator Smith was able to be here, the statement as given here indicated that the House of Delegates, on page 1 of my testimony, the house of delegates of the American Nurses' Association on June 7, 1944 adopted a recommendation which favors "the expansion of health insurance plans and providing for nursing service, including nursing care in the home. It is believed that, in addition to voluntary effort, governmental assistance is necessary for attaining adequate distribution of health services." That is the only action, Senator, that has been taken by the American Nurses' Association, with no specific action taken regarding any specific bill.

SENATOR SMITH: I see. They are not necessarily endorsing this bill but just the general principle of governmental assistance to the health program? MISS DENSFORD: The American Nurses' Association has not taken action regarding S. 1606. The only action it has taken is quoted here.

SENATOR DONNELL: It has taken no action affirmatively in favor of compulsory health insurance? MISS DENSFORD: Neither affirmatively nor negatively. There has been no action.

Statement of Mrs. Beatrice F. Jacobs, Chairman of the Health and Education Committee, League of Women Shoppers, Inc.

MRS. JACOBS: It is my privilege to represent the League of Women Shoppers, a national consumers' organization. The purposes and activities of our organization have always been directed toward the improvement and protection of the American standard of living. Since good health is vital and essential to that standard, we support Senate bill 1606, which will do much to promote the physical and mental well-being of our population and so insure a higher standard of living for all Americans.

(*Senator Donnell brought out that the league has nine branches and that Mrs. Jacobs had not seen any resolutions passed by them.*)

Statement of Mrs. Sophie Anzel

MRS. ANZEL: I am a member of the League of Women Shoppers, and so far as I know the national executive board determines what is to be supported, and anything that the national executive board decides on is binding on the local leagues, regardless of whether they have originally passed a local resolution or not. They may have individually passed on them locally, but the national board speaks for the league always as a whole throughout.

APRIL 25, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Donnell and Thomas of Utah.

SENATOR MURRAY: I would like to insert in the record at this point the report to the Education and Labor Committee on the pending bill from the Secretary of Agriculture, Hon. Clinton P. Anderson.

(*Secretary Anderson wrote in behalf of the bill. He said in part:*)

SECRETARY ANDERSON: The states could pay insurance contributions in behalf of their needy citizens. Such an arrangement, which is permitted in the bill, would avoid the development of a dual system of medical care in which the system worked out for the needy might well be at a generally lower level of quality than for the rest of the population.

With respect to inclusion of farmers and farm workers in this program, the administrative technics in collecting contributions from this group present no insurmountable difficulties. The Department of Agriculture, with the aid and cooperation of the Social Security Board of the Federal Security Agency, has been working on these problems. It is my understanding that what appears to be workable methods are available in assessing incomes of farmers and collecting their contributions for the insurance program.

(*Secretary Anderson emphasized the shortage of medical facilities and personnel in rural areas.*)

Statement of Charles F. Brannan, Assistant Secretary of Agriculture

. . . . . .

MR. BRANNAN: The 57 million Americans who live in rural areas have a tremendous stake in any program that serves the national interest. Forty-three per cent of the nation's population live in communities of less than 2,500 persons. Only about 400 of our 3,070 counties are really urban, and it surprises many to learn that such an urban state as New York has a greater farm population than the five rural states of North and South Dakota, Nebraska, Wyoming and Montana combined. Indeed, rural America is the continuing source of

city populations; the urban birth rate is far lower than that of farm families, and it is only the farm-to-city migration that maintains the size and growth of our cities. Medical experts tell us that illness is most prevalent in the early and the waning years of life. It is, thus, significant in any evaluation of the rural benefits of a national health program to remember that more than half of all the nation's children under 15 years of age, and a higher proportion of persons over 65, live in rural areas.

In 1940 the Farm Security Administration made a survey of low income farm families and discovered an average of more than three significant physical defects for each man, woman and child examined. Anemia, malnutrition, defective vision, dental caries, hernias, childbirth injuries—such was the repeated pattern. Only four out of every hundred were free of significant defects.

Perhaps the most sensitive indicator of health standards is the infant mortality rate. Rural areas have a rate one-fourth higher than that in large cities and in addition have a maternal mortality rate that is one-third higher. Over 3,000 infants could have been saved in 1943 in Texas alone if this state had the infant death rate of urban Connecticut. That 9 more rural than urban infants die out of every thousand born alive is a reflection in part of the fact that less than half the births in rural areas occur in hospitals and many are unattended by a doctor or nurse.

The voluntary health agencies that are helpful in the cities too seldom penetrate to the farmer, and rural sections and whole rural states cannot provide the kind of public welfare services that the industrial centers are able to establish. The Bureau of Human Nutrition and Home Economics has shown that less than 10 per cent of any farm income group receives free medical care. Here again the less wealthy rural states are at a disadvantage from the current 50-50 matching grant formula of federal assistance.

The rural needy are further handicapped by existing state statutory maxima on cash benefits and by the present legal restrictions on the use of federal funds for direct payment for medical services. While in 1942 the most urban state was spending $2.92 per capita for general assistance, the most rural one could afford only $0.25.

. . . . . .

Despite the fact that 43 per cent of the population is rural, only 18 per cent of all professional medical and related personnel are in the farm and village localities. Our most rural counties had, before the war, an average of 1 doctor to every 1,700 persons, while the big city ratio was 1 to 650. Although it is generally agreed that the minimum proportion should be 1 to 1,000, many farm counties have been struggling with ratios of 1 to 3,000 to 1 to 5,000 or even worse; indeed, the war left eighty-one counties in the nation without any doctor at all.

The lowest figures suggested for the average cost of good family medical care, about $100 a year, are beyond the reach of some 80 per cent of all farm families. So, lack of purchasing power results in continued deficiencies of medical care, which in turn is the forerunner of poor health. Then, inevitably, illness and poor health affect earning capacity and work efficiency, thereby further lowering income and the ability to purchase needed care. Thus the vicious circle completes itself. The circle must be broken at some point. And the effective means is prepayment scaled to income—health insurance for all. In this way the catastrophic consequences of unexpected illness can be avoided.

The fundamental solution of the problem of payment for medical services is the one proposed in title II of this bill—that of a single national plan of compulsory health insurance supplemented with general tax funds. Only a nationwide plan has the actuarial soundness to provide equally comprehensive medical care to those in the cities and those in the country, to those in rural as well as in urban states, to the economically insecure as well as to the prosperous. Only such a national plan can offer complete medical care at rates within the reach of all. The limitations of the voluntary approach are overcome while exploiting to the full the principle of spreading of risks and sharing of costs.

Statement of Dr. Frederick D. Mott, Chief Medical Officer, Farm Security Administration, Department of Agriculture

DR. MOTT: The Farm Security borrower families, who are typically in a quite low income group, have been helped to receive needed care through these programs. They have had through the programs, I think, a degree of security which it is hard to overemphasize even though the services have had to be limited. Of course from a hardboiled point of view this program has helped to secure government loans, something we sometimes forget. There have been other good sides of it; I mean a great deal of health experience with health insurance has been gained by farm people, some farm leaders, and by local professional medical people in over a third of the counties in the United States. On the other side, though, I think our outstanding experience has been that not enough famiiles join these plans, even when they have been organized and are right there ready to join. In fact, even though there are supervisory possibilities in the Farm Security program, that is, we have county supervisors and a program of education, farm and home management, and in spite of educational efforts of the county staff and the assistance of loans and so on, not nearly enough farmers tend to join the plans. There were less than one third of the borrowers eligible for the plans who joined.

There are other disturbing features. I will be brief. One is the tremendous turnover. A study made by people at Ohio State University of several plans in Ohio over a period of a little over three years showed that of the families who started in the program only 24 per cent were still members at the end of a three year period. In fact, of all of the families who were members at one time or another during the three years only 8 per cent had been members throughout the whole period from beginning to the end. That type of turnover, of course, tends to leave poor risks in the plan and that same study revealed something very interesting there. They showed that the families who stayed in, in continuous membership, required much more service than the other families. The families who stayed in throughout the three years received over 3,000 office and home calls a year per thousand people. The figure for those who were in for one year periods was 2,000, about 2,027, almost 3,000 and 2,000, showing the effect of leaving poor risks in a voluntary plan, thus keeping costs high and services low.

There have been other points, such as that when people pay just from their own resources on the basis of their ability to pay, benefits have to be quite rigidly limited, and it has not been possible to have comprehensive plans. The effect of the plans too has not been to do anything fundamental about improving local resources. They simply do not mobilize the purchasing power that would bring physicians into an area or enable a hospital to be maintained better.

Those, I think, are some of the major points in our experience. The plans have done some good, but these inherent weaknesses have certainly been perplexing, and we see no other answer except a more or less universal program for the whole population, both rural and urban.

SENATOR MURRAY: Some complaints have been made against the system proposed under this legislation as limiting the free choice of doctors. Have you any comment on that, Dr. Mott? DR. MOTT: Of course, one point that I might bring out right at the start is that there is extremely little choice and very often no choice at all for rural people in many areas. First, there is the economic side. When you cannot afford medical care, it happens in the case of many of these farmers that they simply do not get the care, and that could hardly be called a choice of physicians.

SENATOR MURRAY: The doctors often live considerable distances from the homes of these rural people. DR. MOTT: The distance factor comes into that raising the cost. I mean we still tend to keep to what was a horse and buggy institution of a dollar a mile one way and making costs prohibitive.

SENATOR MURRAY: Sometimes a single call will cost $25 in some rural areas where you have to use an automobile and go a considerable distance. DR. MOTT: There is another point there on this question of choice, if I may say so, and that is we have of course many counties in which there is not even a single physician. Towards the end of the war there were some eighty-one counties with no physicians at all. There were another twenty counties, which had populations of over 10,000 people, with only one doctor. There is hardly much choice there. There were another fifty counties with only one doctor with populations from 5,000 to 10,000 people. There were another fifty-one with only one doctor, with populations of from 3,000 to 5,000 people. Of course, I believe that under this bill freedom of choice will be increased and enhanced. In the first place the economic barriers are removed, and you can go to your physician.

SENATOR MURRAY: Your department has had much experience in medical care plans sponsored by state medical societies. Will you give us your experience with those kinds of plans?

DR. MOTT: We have had some experience, sir, along those lines. Of course in certain states it has been most excellent for us to work out contractual arrangements, with medical society plans. In some states it has been the only way in which we could bring any protection to our borrowers, because of state enabling, or we sometimes think of them as disabling acts, making it possible for a medical care system at this time to be the only one dominated by the organized profession. We have had arrangements with medical societies' plans in several states, in New Jersey, in western New York, in North Carolina, in Oregon and in California.

Two or three points about our experience I think might be worth bringing out. To me one of the discouraging things about the development of plans sponsored by the organized profession is that the very group which should believe most in the high quality of service and should put every ounce of effort behind the development of programs that would produce services of high quality are doing the least. They are doing the least in this way, that the plans being sponsored are restricted in the main to care received in hospitals. Usually it is the end result of illness or disability of some kind or another that puts you in the hospital, not always by any means, but when one thinks of what medical service of real quality would be, preventive services, early care, diagnostic services of various kind, laboratory, x-rays, consultation all the patients usually go through before being in the hospital, or frequently so, these plans are wofully weak in that respect.

That brings me more closely to our own experience. Virtually the only medical society plans in the United States today offering any kind of general medical service, including home and office care, are the special arrangements which we have induced the medical society plans to put into effect, often for our borrowers or for a low income group of farmers. It has taken constant struggle and effort year after year and often every quarter of the year for us to keep these plans going. The whole tendency of the organization is to drop plans of that type. I might cite the California Physicians Service, for example. I believe there has been some testimony with respect to that organization here. We have had a plan or an agreement with the California Physicians Service for a period of something like four years. There is a special contract for all farm families who wish to join, or join in groups, who have net incomes of under $2,000. The plan has been confined almost entirely to our borrowers, however. The rates were forced up at one stage during the last three or four years to the point where the families are now paying around $60 a year for a family of three or more for a somewhat limited service but one that does include home and office care, some hospitalization and surgical care, except for chronic conditions. That is the only plan administered by the California Physicians Service for families which provides a general medical service, including home and office care.

They now are threatening, and this has gone on for some months, to close out each of our local health associations at the end of the fiscal year, offering in return higher rates for less service in a contract that is almost precisely like this so-called commercial contract. It is not a happy prospect for our families. They will not pay more for less service, dropping home and office care, and I suppose the more or less monopoly situation is such that no other plan will be open to them if they are dropped from that program.

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(In his questions Senator Donnell took Mr. Brannan over the rights of the Surgeon General and other administrative agencies in the bill.)

(By his questions Senator Donnell elucidated the opinion that the bill would require three billion three hundred million dollars a year.)

SENATOR DONNELL: Doctor, there would be the necessity of having under the jurisdiction of the Surgeon General, and finally back under the direction and supervision of the federal security administrator, such employees in every city of any size in the country, would there not? That is, in the administration of this? DR. MOTT: Any city of any size, I would think you are right.

SENATOR DONNELL: Wouldn't it be necessary almost to have somebody in every town in the country as a representative to make quick decisions as to matters arising under the compulsory insurance act? DR. MOTT: I would not think so, sir. Knowing rural counties fairly well, and I have not given a great deal of thought to this, but I might say, sir, that I would think that an employee in a single county would often be excessive. If we get into the kind of a district organization of health services which most of us hope for, with coordination of public health and medical care services in districts, the rural district will often comprise, let us say, three counties. I am not sure how much detail would be involved in this bill. I would think in terms of a full time employee at such a level, that would be more logical perhaps once the system was under way.

SENATOR DONNELL: On page 14 of your statement you say "In a voluntary program there is little incentive for preventive medical practice and little inducement to improve the quality of medical care." Do you not think that, as a matter of fact, under the voluntary program that we have had of the administration of medicine in this country, for the entire history of the country, that there has been some incentive for doctors to advance and to progress and that there has been advancement in the country? MR. BRANNAN: Senator, I am a profound admirer of the medical profession, and I do think they have done wonderful things with limited facilities, but I think it is time this nation ceased to impose on them. We should make adequate facilities to do the type of a job they are doing and not ask them to take on unlimited numbers of charity patients or patients from whom they cannot reasonably expect to get adequate remuneration.

AFTER RECESS

Statement of James G. Patton, President, National Farmers Union

MR. PATTON: For many years the National Farmers Union and I personally have contended for the use of the full power of the national government to bring to rural America the facilities and lacks that are so deplorable as to shame the great nation of which we are a part. I appreciate doubly, therefore, the opportunity to appear before the committee today to give unqualifiedly the endorsement of my organization and myself to the national health bill, S 1606.

(Mr. Patton covered much the same statistics as had been covered by previous testimony.)

These vast needs are not being met now. In the 1,000 most rural and isolated counties before the war there was only one doctor to 1,750 persons, whereas in cities there was a doctor for each 650 persons. During the war the situation became even more alarming. In hundreds of rural counties the war caused the ratios to rise to one physician to 3,000 to 5,000 or even in extreme cases to 10,000 persons. The same thing is true of dentists and of nurses. Before the war there was one dentist for 1,400 persons in the cities and but one to 4,200 in the country. As to nurses, the rural state of Mississippi in 1940 had but 62 active nurses per hundred thousand persons, whereas Massachusetts, largely industrialized, had 403.

The key to this situation lies in the universal compulsory prepayment plan embodied in this bill. Only on such a base will it be possible to erect the structure that is needed in rural areas. The most altruistic of doctors must, after all, earn a living, and a hospital cannot operate without an economic base. That base does not exist in rural areas and will not exist unless a prepayment plan of the kind proposed here is adopted. As Dr. Henry B. Richardson, chairman of the Physicians' Committee on Research, an eminent physician himself, has said: "You can hardly expect a doctor to settle in a small community if it is contrary to his professional growth, or if it is contrary to the interests of his family and the education of his children." Voluntary plans will not do the job. This is not to condemn their efforts. Indeed, the National Farmers Union not long ago inaugurated its own voluntary prepayment plan, the Triangle Health Insurance Plan, and naturally I would not have urged the adoption of that plan if I held any bias against voluntary programs. But at their best such plans cannot give complete coverage. Those most in need of insurance against disease are the very people who fail to benefit from voluntary programs. Both membership and services of such plans are restricted, in most instances necessarily, in order to protect the structure of the program itself. Then too the costs of such plans are always much higher than a universal compulsory prepayment plan, if for no other reason than that they cannot achieve the coverage that a national program can achieve. Moreover, many of those who are attracted to voluntary programs are those who expect to require medical treatment or hospital care, and hence costs are inevitably increased for all participants. There is no graduation of costs in voluntary plans on the basis of the ability of those taking part to pay, whereas under the proposed national program charges are based on ability to pay. Finally, many of the existing voluntary programs fail to give any representation in management to the participants, those who after all are the ones whose needs are supposed to be met. I do not believe that the adoption of the bill would mean that exist-

ing voluntary programs would be damaged, since S 1606 provides for the utilization wherever possible of existing programs.

In conclusion I wish to appeal to the committee to proceed as rapidly as possible to the approval of the bill and to Congress to enact it speedily. It has been said that the bill is "state socialism," which of course is nonsense. Every advance in the use of governmental power for the people has been greeted with the same phrase. Democracy does not mean impotence or lethargy. To me it means the right of the people to use their government to their own ends. "Government of the people, by the people and for the people" would be a futile array of words if "for the people" was omitted. I think that this bill is an illustration of government not only "by the people" but "for the people" and as such illustrates the workings of democracy at its best.

It has been said that the bill may restrict the freedom of choice of patients in choosing their doctors, or of doctors in choosing whether to stay in or out of the program. These objections seem to me to be quibbling. The bill has been carefully drawn to protect these rights within any reasonable interpretation. Moreover, I ask, what choice does a farmer have now in the hundreds of counties where there is no doctor at all? His only choice is made for him. He must die or get well without benefit of choice.

(Senator Donnell in his questions covered the total cost of the measure and its method of administration.)

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SENATOR DONNELL: At any rate your organization never has passed a resolution endorsing S 1606; that is correct, is it not? MR. PATTON: Yes, that is correct. And I doubt that we will, until it is, that is, until it becomes the law. We know what goes on up in this place and how many different times it can be twisted before it gets through, so we are not going to endorse something until we know what we are buying.

SENATOR DONNELL: I understand, however, if I read the language correctly, you do endorse it here today. MR. PATTON: As it is now constituted. We will also refuse to endorse it the minute it gets some bad amendments in it which we do not agree with.

SENATOR MURRAY: And you feel that it is only through a universal prepayment plan of some kind that adequate health care can be brought to the people of the United States? MR. PATTON: I do.

SENATOR MURRAY: You do not believe that it is possible to accomplish that by voluntary systems? MR. PATTON: You know, Senator, out in the West, you are from the West, we tried hail insurance. First the Farmers Union and some of the cooperatives tried hail insurance and as long as we had it so that to put it on their tax roll, you see the cost was away down, but when we got to it so that it was a voluntary business the man who lived in a hail area always insured, but the fellow who did not would try and loop in and loop out, with the result that our cost began to go up very drastically, and the whole proposition of insurance is predicated on getting a broad enough risk to get an actuarial or an adequate, at least, sampling.

SENATOR MURRAY: The people who join the voluntary system are usually prompted by the fear that they are going to suffer ill health in their family. MR. PATTON: Yes.

Statement of Mrs. Jerome Evanson, Director of Education, North Dakota Farmers Union

MRS. EVANSON: Rural people can have adequate medical care and health services. World War II proved that hitherto debatable point. During World War II we saw modern health facilities and services—the best in the world—brought to our farthest desolate outposts on the Aleutian Islands in the North Pacific. Our government provided medical care and services on the most inaccessible islands of the South Pacific, in the impenetrable jungles of Burma and India and over the "hump" to the natives in the interior of China. No spot in the world was too remote. It gladdened our hearts and made us proud, but it also made us think.

No longer can these same services be denied to our own people here at home. No longer can any one say it is not feasible to establish good medical care and services in our rural areas. The war provided these services wherever there was a need for them at the war front. The peace shall provide these services wherever there is need for them on the home front, and the greatest need on the home front today is in rural areas. What a pity that it had to take a world war to awaken us to the realization that "medical care for rural people can be complete and it can be good."

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To shock people out of their complacency, I would like to suggest that for every area posted as disease free for cattle we should have posted the list of needless cases of illness and deaths among the people in that area who have not had the same consideration as our cattle. It may awaken some people to an awareness that even though our children haven't the cold dollars and cents value of cattle they should and must warrant the same protection that is given our cattle. That protection has definitely not been given our people in rural areas to date. Shocking? Yes. So are the high rejections of rural boys for the services—the highest of any major occupational group. Shocking too are the figures for maternal and infant death rates and for death rates in all age groups in rural areas.

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We the people want to participate in the formulation of a health program. We believe that those who receive services as well as those who give services should have the right of representation on councils determining quality, cost distribution of hospital care and health services. Medical people seem to resent participation by lay people and seem to look on it as interference. It would seem that to many people the sole responsibility of the consumer should be to furnish the patient and the fee. To justify their insistence on control of programs they speak of their past record and point to the high standard of services rendered. We can only think of how bad the services are for so many of our people. They talk of the high quality, and, important as quality is, we think quantity and distribution are important too, for what good is quality when it is out of reach of the people who are ill and need it? These problems will not be overcome until lay people actively participate in the formulation of health programs.

The American Medical Association is particularly opposed to the matter of compulsion—"it is so undemocratic." Would they take away compulsion in the matter of education and let every child volunteer to attend school? Would they take away compulsion in the matter of contagious diseases and leave it to the individual to isolate himself voluntarily? Would they take away the compulsion of sanitation laws, doctors' licenses or intern training or even the years one must study before one can practice medicine? Isn't compulsion a necessary safeguard where the welfare of all is at stake? The shocking revelation of health conditions in rural areas most certainly justifies compulsion in the matter of health care.

SENATOR DONNELL: Were you on the committee which drew up this statement of principles that Mr. Patton referred to? MRS. EVANSON: No, I was not a member of the resolutions committee. However, I was a participant in the discussions.

SENATOR DONNELL: You were familiar with S. 1606 at the time? MRS. EVANSON: That is right.

SENATOR DONNELL: And that particular bill was not in express terms at any rate endorsed in those resolutions, was it? MRS. EVANSON: No.

SENATOR DONNELL: Simply there was a commendation of President Truman for his courage and vision in calling for a universal prepayment medical care program and calling on Congress to pass legislation to put that into effect?

MRS. EVANSON: However, at this meeting, at this discussion, we stated that we would go out and work for any health compulsory health act, as it would give expression to our objectives, and we did state at that time it was the Wagner-Murray-Dingell bill and this new bill which we had not felt that we had not given the study to, that we should, but that we would endorse it as it gave expression to the objectives of our program.

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SENATOR DONNELL: You refer in the conclusion of your remarks to new ideas. You say it takes courage to sponsor new ideas, to chart new courses. You do not undertake to say that this idea of compulsory health insurance is a new idea, do you? MRS. EVANSON: No, I do not, but it is a new idea to many, many people, and it seems to be a very new idea and a dangerous new idea, seemingly, to the medical association.

SENATOR DONNELL: On the matter of this hail insurance that you speak of in Dakota, I presume we would agree that there are very many different problems applicable to hail insurance as distinguished from health insurance, would we not? MRS. EVANSON: I do not see why there should be too many.

SENATOR DONNELL: Just to illustrate, without going into detail, the matter of hail insurance involves first the payment of a premium, and in the second place if there is a loss by hail the ascertainment of the damage and then in the third place the collection of the damage; that boiled down is hail insurance, is it not? MRS. EVANSON: Yes.

SENATOR DONNELL: Whereas health insurance involves the matter of the selection of doctors, the question of the quality of doctors, whether or not initiative of the doctors is or is not encouraged, the question as to the best means of encouraging advancement in the medical profession, the question as to whether or not there is to be a national control of health insurance, and of the selection of doctors away down the line out in your state and mine; all of those things differ from hail insurance, do they not? MRS. EVANSON: That is right.

SENATOR DONNELL: However, that may be North Dakota tried the compulsory hail insurance, did it not? MRS. EVANSON: It did, that is right.

SENATOR DONNELL: And later on the legislature had the matter of repeal of that up before it, did it not? MRS. EVANSON: Yes, it did.

SENATOR DONNELL: Did it repeal it? MRS. EVANSON: It changed; it did not repeal the law. It changed it from compulsory to voluntary.

SENATOR DONNELL: So the question of whether or not you should retain compulsory hail insurance was in the first instance presented to the legislature, which passed a law providing for compulsory hail insurance and in the second place, later on, the legislature had before it the question as to whether compulsory hail insurance should be abandoned and voluntary hail insurance be substituted; is that not correct? MRS. EVANSON: That is right.

SENATOR DONNELL: And the legislature, whether for good or for bad reasons, decided to abandon the compulsory hail insurance and substitute voluntary insurance; is that not right? MRS. EVANSON: That is right.

SENATOR DONNELL: On page 4, where you make the statement that I am wondering just what you mean by it. You say "Since most diseases are preventable, then why are they not prevented? Is it because certain groups have a stake in our illness?" Do you mean to imply by that that the doctors of our country are trying to hold back this country from solving the health problems because they are going to make more money out of it if we have sickness than if we do not have it? Is that what you mean? MRS. EVANSON: No, but I was reminded of the experience in Manitoba, where they are hiring doctors in municipalities, where he said that he had a stake in the health of the people so it was his job to keep them healthy, and he had gone into the preventive phase of health care, had developed much greater in that community, and he said it was because he had a stake in their health instead of their illness. It was his job to keep them well.

SENATOR DONNELL: I understand, but that does not quite answer the question I had in mind and that I tried to state to you. You say "Science says that most diseases are preventable. Then why are they not prevented? Is it because certain groups have a stake in our illness?" Let me say Who did you mean by "certain groups"? MRS. EVANSON: I would say the medical people.

SENATOR DONNELL: The medical profession? MRS. EVANSON: They are the ones that have the stake in our illness.

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(Mrs. Evanson described two doctors who refused to see patients unless assured of their fees.)

SENATOR DONNELL: Are those the only two doctors that you personally know of who have been guilty of this kind of unkind conduct? MRS. EVANSON: No, in our discussions of health out in the rural areas I have heard enough stories that made me sick,

SENATOR DONNELL: You do not— MRS. EVANSON: Sick at heart and sick to my stomach for the things that have been done.

SENATOR DONNELL: You feel that the medical profession is in many instances guilty of very reprehensible conduct, is that your thought? MRS. EVANSON: Yes, indeed.

SENATOR DONNELL: As you have indicated, you think there is this clique that places dollars above health? MRS. EVANSON: I want to say this— SENATOR DONNELL: Just a minute. Is that right? MRS. EVANSON: Yes.

SENATOR DONNELL: I am curious to know what the difference is, if any, between the underlying principles of the National Farmers Union and the underlying principles of the Grange and of the Farm Bureau Federation. Do you know what the difference is, the underlying differences between them?

MRS. EVANSON: I can speak as far as the health program is concerned, of course. The Farm Federation, the Farm Bureau, and you very likely know their stand, but they do not believe in compulsory health insurance.

SENATOR DONNELL: I wanted to know what the underlying differences are between the National Farmers Union and the Grange and the Farm Bureau. MRS. EVANSON: We believe in the security of the family type farm and a more satisfactory way of life for the farm family on the land.

SENATOR DONNELL: Does the Grange believe in the same thing? MRS. EVANSON: I think the Grange is very much socialistic, that is, I mean it is more of a brotherhood fellowship society. I do not know too much of their stand. I think the Farm Bureau works among the people, the larger land owners, and are concerned about them. Of course this is just my own personal observation as I have seen it. We are working for the small family type farmer, and the general welfare always is considered in whatever program we take up.

Statement by Harold Aaron, M.D.

DR. AARON: I am Harold Aaron, M.D. I appear here as the medical adviser of Consumers Union of United States, a nonprofit organization supplying technical information on goods and services to more than 100,000 American families. I am a family practitioner and have practiced medicine in hospitals and clinics as well as in private practice since 1929. In common with an ever increasing number of physicians, I am convinced that high quality medical care can be obtained only if the financial barrier to such care is removed by a system of prepayment compulsory insurance. If S.1606 is enacted into law, the great majority of American families could obtain all the services necessary for high quality care at a price that they could afford to pay.

SENATOR DONNELL: Doctor, you are the medical adviser of Consumers Union of the United States? DR. AARON: Yes, sir.

SENATOR DONNELL: What is that organization? DR. AARON: A technical organization, nonprofit, which supplies information on goods and services to those who subscribe or belong to the organization.

SENATOR DONNELL: Do you know how many persons either subscribe or belong to it? DR. AARON: At the present time about 105,000 people subscribe to it, or families, if you will.

SENATOR DONNELL: What is the annual charge that the subscribers pay? DR. AARON: It varies from $4 to $5. When you come in in a group, I think it is $3.50. I think if you do not come in with a group it is about $4 or $4.50. I am not altogether sure of the exact figure.

SENATOR DONNELL: So there is an annual income of this organization of somewhere in the neighborhood of $425,000; is that right? DR. AARON: Approximately, yes, sir.

SENATOR DONNELL: Who are the officers of that organization, Doctor? DR. AARON: Well, I do not have a statement of all the officers. I have a list of the executive committee, which authorized me to appear here.

SENATOR DONNELL: Will you tell us who is on that committee? DR. AARON: Myself; Dr. Frank Beube, who is a dentist, an assistant professor of dentistry at the College of Physicians and Surgeons of Columbia University; Mr. Jerome H. Hellerstein, an attorney; Dr. Emanuel Klein, a psychiatrist, formerly on the New York Psychiatric Board; Dr. Edward Reich, who is an educator; Mr. Bernard Reis, a certified public accountant and executive secretary of the American Investors' Union; Miss Adelaid Schulkind of the League for Mutual Aid; Dr. Colston E. Warne, professor at Connecticut College; Arthur Kallet, and Miss Madeline Ross.

SENATOR DONNELL: You say you are authorized and directed, I take it, by this executive board to come here to testify? DR. AARON: The executive committee of the board.

SENATOR DONNELL: Do you know whether or not the organization holds meetings or conventions of its members or delegates? DR. AARON: We have a yearly convention.

SENATOR DONNELL: When was the most recent one held? DR. AARON: The most recent one was held in June of last year.

SENATOR DONNELL: Approximately how many people attended it? DR. AARON: I do not know. Approximately about fifty or sixty. It was a very hot day.

SENATOR DONNELL: And they represented this approximately 105,000 members? DR. AARON: No. They did not represent these 105,000 members. We get the will of the 105,000 members through an annual questionnaire which we send to all our members every year, asking them for their opinion about the services, the way we have been giving them service, what criticism they have, and so on. And we tabulate the answers; that is, the questions and the answers, and we also tabulate at the same time their votes for members of the board. That represents the opinion of the membership.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Physician Sentenced for Income Tax Evasion.—The Birmingham *News* reported on April 1 that Dr. Haickel A. Elkourie, Birmingham, was sentenced to one year and one day imprisonment and fined $2,500 on charges of income tax evasion by Federal Judge Clarence Mullins in the U. S. District Court in Birmingham. Dr. Elkourie was also placed on two year probation on a third count of the indictment. The fine and prison sentence were for two other counts. The prison sentence was to begin on May 31, the Birmingham *News* stated. In addition to the fine Dr. Elkourie will have to pay $27,000, which represents $18,000 the government claims he owes in taxes, plus a $9,000 penalty. The physician was given the two years probation on one of the counts on the condition that he pay this sum. Dr. Elkourie was charged with evading income tax payments for 1941, 1942 and 1943. He failed to report $67,000 income for these three years, according to the indictment.

CALIFORNIA

Dr. Swartout Resigns as Health Officer.—Dr. Hubert O. Swartout, Los Angeles, has resigned as health officer of Los Angeles County, effective at the end of June. He held the position for three years. Dr. Swartout plans to locate in Santa Maria.

The Dock Lecture.—Dr. Donald I. Frick, Los Angeles, gave the annual George Dock Lecture of the Barlow Society for the History of Medicine, April 4, at a joint meeting with the Los Angeles County Medical Association. His subject was "Carlos Finlay and Yellow Fever."

Cosmic Ray Healers.—On April 13 police raided open air "cosmic ray centers" and arrested three men on suspicion of violating the State Medical Practice Act, the Los Angeles *Times* reported. Nearly a hundred persons, most of them aged, and scores of cars were clustered around the trailer establishment operated by Paul and Charles Beebe. Those taking "treatments" clutched bare wires or wrapped them around legs, arms or their neck while supposedly absorbing cosmic rays from the sun, according to the *Times*. The theory on which the operators offered the treatment was that the rays were transmitted directly to affected parts of the body after being picked out of the air by wires and "reduced" to health-giving strength. No charge was asked for being permitted to hold one of the wires, but gifts of money were accepted. Sandwiches, wheat, water, ice cream and other food which the operators claimed had been treated by cosmic rays also were seized as evidence.

Physicians and Horticulture.—The *Bulletin* of the Alameda County Medical Association for May discusses the horticultural activities of some of its members. Dr. Warren B. Allen, Oakland, president of the county society, is one of the founders of the Orchid Society of California. Dr. Michael A. Torrano is a charter member, and Dr. Lloyd H. Hawkinson, both of Oakland, is present president of the orchid group and associate editor of its quarterly magazine, the *Orchid Digest*. At a recent camellia show in San Francisco Dr. Walker M. Wells, Oakland, won first prize. Dr. Noble H. Logan, Oakland, who is official photographer of the exhibit in San Francisco and elsewhere, has won prizes for camellias, roses and other flowers. Other members of the county medical society engaged in horticulture as an avocation include Drs. Stanley R. Truman, Herman V. Allington, George F. Calvin, Evelyn H. Case, Brooks P. Stephens, Demetrio E. Jeffry, George V. Van de Vert, Kenneth A. Nielson, Harold A. Morse, Stanley S. Davis, Kenneth J. Thompson, John I. Phillips and Philip N. Baxter, all of Oakland.

FLORIDA

New Director of Laboratories.—Dr. Albert V. Hardy, who has been serving with the Office of Scientific Research and Development and the National Institute of Health, Washington, D. C., has been appointed director of the bureau of laboratories of the Florida State Board of Health. Dr. Hardy graduated at the University of Toronto Faculty of Medicine in 1924. He once served as epidemiologist with the Iowa State Department of Health, as associate professor of preventive medicine at the State University of Iowa College of Medicine, Iowa City, and as associate professor of epidemiology, Columbia University College of Physicians and Surgeons, New York.

IDAHO

Hospital News.—The Sisters of St. Francis are planning construction of an $800,000 hospital in Idaho Falls. The site has been purchased and a finance committee has been appointed.

State Medical Meeting.—The Idaho State Medical Association will hold its 1946 meeting in Boise, June 17-20. Among the speakers will be:

Dr. James J. Waring, Denver, Various Aspects of Tuberculosis.
Dr. Kenneth C. Sawyer, Denver, Carcinoma and Gastrointestinal Complications.
Dr. Ward Darley Jr., Denver, Diagnosis of Rheumatic Fever and Rheumatic Heart Disease.
Dr. Edwin Stewart Taylor, Worthington, Minn., Practical Gynecologic Endocrinology.
Dr. Harry C. Hughes, Denver, Low Back Pain and Fractures.

Educational Program for Cancer.—The Idaho State Medical Association proposes to cooperate in the following five point educational program sponsored by the Idaho division of the American Cancer Society:

Continued education of the public by the physician regarding the importance of an early cancer diagnosis.
Distribution to the physician and the general public of the booklet entitled "How Your Doctor Detects Cancer," which explains in detail the various steps taken by the physician to determine the presence of cancer.
Establishment of a reference circulating library for physicians containing the latest information on the diagnosis and treatment of malignant cancer and diseases.
Formulation of a program of graduate education for selected physicians practicing medicine in Idaho.
A survey of the entire state to determine the number of persons having cancer and the various types prevalent in the state of Idaho.

ILLINOIS

Examination for Health Commissioner.—A competitive examination for the purpose of filling the positions of health officer of the Champaign-Urbana health district, Champaign, and the Stickney District Health Department, Stickney, will be held in Chicago on July 20. Admission to the examination will be limited to persons possessing minimum qualifications of education and experience. Further information may be obtained by writing to Dr. Roland R. Cross, Director, Illinois Department of Public Health, Springfield.

Chicago

Conference on Exceptional Children.—"The Community's Opportunity" will be the theme of the third Governor's Conference on Exceptional Children at the LaSalle Hotel, June 14. The program is under the auspices of the Illinois Commission for Handicapped Children, 211 West Wacker Drive, and is open to all persons, whether they are parents or teachers, health or welfare workers, members of service clubs or church or civic groups, who are interested in improved state and local facilities for handicapped children.

IOWA

Personal.—Dr. Raymond J. Brink, Ayrshire, was elected mayor of Ayrshire recently.——Dr. Pierre Sartor, Titonka, recently completed fifty years in the practice of medicine.——Dr. Nunzio J. Carrozzo, Staten Island, N. Y., has been assigned from the U. S. Public Health Service as acting medical director for the Iowa state division of industrial hygiene.

KANSAS

New Editor for State Journal.—Dr. William M. Mills, Topeka, has resigned as editor of the *Journal of the Kansas Medical Society*, a position he held for eleven years, to become president of the state society. Dr. Lucien R. Pyle, Topeka, a member of the editorial board for eleven years, has been named editor.

KENTUCKY

Changes in Health Personnel.—Dr. Paul F. Orr, U. S. Public Health Service, has resigned as health officer for Nelson, Bullitt and Spencer counties to enter private practice in Toledo, effective April 1.——Dr. Mildred E. B. Gabbard, Harrodsburg, has resigned as health officer of the Mercer County Health Department, effective April 1.——Dr. George M. Jewell, Mayfield, has resigned as health officer of Graves County, effective March 23.——Dr. Benjamin F. Reynolds, Carlisle, has been appointed health officer of Nicholas County, succeeding Dr. Robert L. Loftin, Cynthiana, who accepted a similar position in Bay City, Mich.——Dr. Harland V. Usher, Sedalia, has been named health officer of Graves County, succeeding Dr. George M. Jewell, who has entered private practice in Kokomo, Ind.——Dr. Russell E. Teague, Louisville, has resigned as director of tuberculosis control for the Kentucky State Department of Health to carry on similar activities for the U. S. Public Health Service, it was reported April 25.

Nutrition Survey.—The Hardin County Health Department on April 19 began a nutrition survey. Under the supervision of Dr. Charles H. Blandford, Elizabethtown, director of the county health department, the survey will extend over a five year period with children now in the second, third and fourth grades of two county schools. Each child will be given physical examinations annually, dietary and other recommendations will be given to the parents and the annual examination will be used to determine the beneficial effects on the physical progress of the child.

MAINE

State Medical Meeting.—The Maine Medical Association will hold its ninety-second session at the Poland Spring House, Poland Spring, June 23-25, under the presidency of Dr. Adam P. Leighton, Portland. Included among the speakers will be:

Dr. Walter G. Dixon, Norway, Internal Derangements of the Knee Joints.
Dr. Reginald H. Smithwick, Boston, Surgical Treatment of Hypertension.
Dr. Elton R. Blaisdell, Portland, Infectious Hepatitis.
Dr. Wilfrid J. Comeau, Bangor, Therapeutic Procedures in Cardiac Disease.
Dr. Charles W. Steele, Lewiston, Infectious Mononucleosis.
Dr. Theodore C. Bramhall, Portland, Diagnosis of Cancer of the Cervix.
Dr. Edward L. Herlihy, Bangor, Small Bowel Obstructions.
Dr. Edward H. Risley, Waterville, Progress in Handling Surgical Diseases of the Colon.
Dr. James M. Parker, Portland, Deep Thrombophlebitis.
Dr. Leo J. McDermott, Portland, Epiphysial Injuries.
Dr. Thomas A. Martin, Portland, Colles's Fracture.
Dr. Chester S. Keefer, Boston, Streptomycin.
Dr. Joe Vincent Meigs, Boston, Wertheim's Hysterectomy.

In addition the program will include a symposium on gastrointestinal bleeding. Dinner and luncheon speakers will include Mr. John O'Connell, Bangor, editor, Bangor *Daily News;* Dr. Harry C. Loos, Ross-Loos Medical Group Clinic, Los Angeles, and Dr. Charles G. Heyd, New York, past President of the American Medical Association.

MASSACHUSETTS

Walter Cannon Memorial to Be in France.—A memorial to Dr. Walter B. Cannon, late George Higginson professor of physiology at Harvard Medical School, Boston, is to be established in Toulouse, France. A hospital there, organized and staffed by Spanish refugees from Franco to serve their fellow refugees in France, is to be expanded and operated under its new name, the Dr. Walter B. Cannon Memorial Hospital. Dr. Cannon, who was president of the American Association for the Advancement of Science in 1939, actively aided the Spanish Republicans from the start of the Civil War in 1936 to the end of his life. He became chairman of the Medical Bureau to Aid Spanish Democracy in 1937 and at his death was honorary co-chairman, Boston chapter, Joint Anti-Fascist Refugee Committee. Through the Unitarian Service Committee the Joint Anti-Fascist Refugee Committee has been helping the 150,000 or so Spanish refugees remaining in France after three years of war and seven years of destitution and suffering. Ineligible for aid from the Red Cross, UNRRA or the French government, these "people without a country" are said to be as acutely in need of medical care as almost any one in the world. They depend entirely on American charity. Some 150 prominent Boston citizens, including thirty-seven physicians, have just started a drive for $75,000 to buy some of the necessary equipment for the hospital in Toulouse and to safeguard its continued operation. All funds are managed and spent in France by the Unitarian Service Committee. After Spain returns to democracy, the memorial to Dr. Cannon will be perpetuated there. Co-chairmen of the drive are Dr. George R. Minot, professor of medicine, Harvard Medical School, Boston; Frederick May Eliot, D.D., president, American Unitarian Association; Ralph Barton Perry, professor of philosophy, Harvard University, Boston, and Paul T. Smith, attorney. Headquarters of the Dr. Walter B. Cannon Memorial Fund are at 14 Beacon Street, Boston.

NEW YORK

Rochester Academy Awards Prizes.—Dr. William W. Percy, Rochester, executive director of the Rochester Academy of Medicine since 1939, was given life fellowship in the academy at a meeting May 14. The honor was accompanied with a citation for "outstanding services to the academy." Formerly president of the Rochester Medical Association, Dr. Percy was instrumental in joining that organization with the Academy of Medicine to form the present Rochester Academy of Medicine. The academy also presented the following prizes to Rochester physicians for the work indicated: Dr. Searns S. Bullen, the Albert Kaiser Medal for his work in the field of allergy; Dr. Jacob W. Holler, the John W. MacCauley Prize for his paper "Potassium Deficiency Occurring During the Treatment of Diabetic Acidosis"; Dr. George P. Heckel, The Paine Drug Company Prize for his paper on "The Association of Ovarian Pain with Ovarian Dysfunction, the Role of Estrogen and the Importance of Conserving Ovarian Tissue," and Dr. Herbert R. Brown Jr., the Taylor Instrument Company's prize for his paper on "The History and Analysis of Human Whole Blood Distribution in the Pacific Area."

New York City

George Humphreys Named Professor of Surgery.—Dr. George H. Humphreys has been appointed Valentine Mott professor of surgery at the Columbia University College of Physicians and Surgeons and director of surgical service of Presbyterian Hospital, it was announced May 28. Dr. Humphreys succeeds Dr. Allen O. Whipple, who will retire in September after twenty-five years' service. Dr. Humphreys graduated at Harvard Medical School, Boston, in 1929 and is currently assistant professor of clinical surgery at Columbia, a position he has held since 1940. He is also assisting attending surgeon at Vanderbilt Clinic and the Babies and Presbyterian hospitals.

State Plans Mental Hygiene Expansion.—A mental hospital to cost $15,000,000, with beds for 3,160 patients, will be erected on Ward's Island in the East River as part of the state's postwar public works program, according to the New York *Times.* The project contemplates an outlay of $10,005,000 for the first group, which will be a medical and surgical building, a unit for the care of disturbed and continued-treatment patients, two admission service blocks, administration quarters and a central kitchen. Preliminary plans for fourteen additions proposed by the department of mental hygiene are under preparation for the planning commission. The estimated cost of these is in excess of $5,000,000.

Physicians Warned of Sending Patients to Arizona.—The New York Tuberculosis and Health Association has informed the five medical societies of New York City of an exchange of communications with Arizona health and business organizations. The information is given as a warning to physicians who are sending their patients in search of an ideal climate to hasten their cure from asthma and other conditions. The housing shortage is still acute in Arizona, it was stated, with no immediate relief in sight. The chambers of commerce in Arizona are cooperating in an effort to locate suitable facilities for patients. One chamber of commerce issued a special monthly housing bulletin in which it reported 343 applications for housing in March 1946 and only 127 placements. No furnished houses were available and there were only two apartments during the month. C. Edgar Goyette, secretary of the Tucson Chamber of Commerce, in reply to a query from the New York Tuberculosis and Health Association, stated that "during the past year we have had the most difficult and acute housing shortage in our history," and, Mr. Goyette adds, "we would earnestly suggest, in view of conditions, that definite arrangements be made for housing before coming to Tucson."

Israel Weinstein Named Health Commissioner.—Dr. Israel Weinstein, acting health commissioner of New York, has been appointed health commissioner, filling the vacancy that occurred when Dr. Edward M. Bernecker resigned (THE JOURNAL, March 23, p. 805). Dr. Weinstein graduated at Columbia University College of Physicians and Surgeons in 1926. He has been associated with the health department since 1924, serving in a full time capacity since 1936. At the time he was named acting health commissioner, Dr. Weinstein was first deputy commissioner. On the resignation of Dr. Ernest L. Stebbins, Dr. Edward M. Bernecker was on March 4 appointed by Mayor William O'Dwyer as commissioner of health. The selection invited considerable protest primarily because it was believed that Dr. Bernecker, in his position as commissioner of hospitals of the city health department, did not have the proper qualifications and practical experience for a public health administrator and his name had not been included in a group of candidates recommended by a specially appointed committee or in a group recommended by the board of health. The recommendations totaled some thirty-eight names. Dr. Bernecker resigned the position on March 13 and was immediately reappointed to his former position as commissioner of hospitals. Following the appointment of Dr. Weinstein as acting commissioner, March 13, press reports indicated that Drs. Dean A. Clark and Leonard Greenburg were being considered for the appointment, but on May 24 Dr. Weinstein was named to the post. Prior to his appointment as deputy health commissioner Dr. Weinstein had been released from military service with the rank of lieutenant colonel.

NORTH CAROLINA

Valy Menkin Goes to Philadelphia.—Dr. Valy Menkin, assistant professor of pathology at Duke University School of Medicine, Durham, has been appointed associate professor of experimental pathology in the newly created department of surgical research at Temple University School of Medicine, Philadelphia (THE JOURNAL, Dec. 1, 1945, p. 972).

Good Health Association.—The North Carolina Good Health Association was organized in Thomasville March 14 with Mr. I. G. Greer, superintendent of the Baptist Orphanage, Thomasville, as president. Lieut. Col. Charles R. Jones was elected executive vice president. Objectives of the program are:

State assistance in the care of indigent sick.

State assistance, in accordance with wise provisions, for building or enlarging local hospitals and establishing and equipping rural health centers.

A medical education loan fund to help worthy North Carolina young men and women who pledge themselves to practice in a rural community for four years.

The expansion of the two year medical school of the University of North Carolina into a standard four year school.

A special study of the medical education of Negroes.

The promotion of voluntary or Blue Cross group insurance plans.

Endowment Fund of Ten Million Approved.—March 26 the board of trustees of the Wake Forest College acted favorably on an offer from the Z. Smith Reynolds Foundation of an endowment fund with the present market value of $10,500,000. According to the *North Carolina Medical Journal* the charter of the foundation provides that 20 per cent of the income be added to the principal until, through this and other contributions, it reaches $50,000,000. The offer stipulated that Wake Forest College be moved to Winston-Salem, where the Bowman Gray School of Medicine of Wake Forest College and the North Carolina Baptist Hospital are now located. Final decision in the matter will be made by the North Carolina Baptist state convention. Officers and directors of the Z. Smith Reynolds Foundation are W. N. Reynolds, president; Stratton Coyner, secretary; Richard J. Reynolds, Mary Reynolds Babcock, Nancy Reynolds Bagley and W. R. Hubner.

NORTH DAKOTA

Public Health Meeting.—The third annual meeting of the North Dakota Public Health Association was held in Bismarck, May 28-29, under the presidency of Francis C. Lawler, Sc.D., Grand Forks. Among the speakers were:

Dr. Gaylord W. Anderson, Minneapolis, Public Health, an Expenditure or an Investment.

Dr. James F. Hanna, Fargo, North Dakota Physician's Service in Cass County.

Mrs. Marguerite L. Ingram, Fargo, and Carlyle D. Onsrud, Bismarck, The Current Hospital Survey and Hospital Planning in North Dakota.

Mr. A. L. Bavone, Minot, The Environmental Sanitation Program Carried Out in the First District Health Unit.

Dr. William M. Smith, Bismarck, The Tuberculosis Control Program in North Dakota.

Mr. John A. Page, Grand Forks, The Proposed Medical Center—Its Program and Plans.

UTAH

Medical Activities at Utah.—The radiologic service, which has heretofore been a part of the department of medicine, has been given full time departmental status. Dr. Henry H. Lerner, formerly a major in the medical corps, Army of the United States, at the Station Hospital, Kearns, has been named professor and head of this department. Dr. Walter S. Loewe of Cornell University Medical College has been appointed research professor of pharmacology. Recent research donations to the medical school include:

Abbott Laboratories, North Chicago, Ill., $1,500 to Dr. Louis S. Goodman for continuation of studies on anticonvulsants and $2,000 to the department of pharmacology for research fellowships.

John and Mary R. Markle Foundation, $1,250 to Leo T. Samuels, Ph.D., professor of biochemistry, for the study of the adjustment of organisms to diet; $2,500 to Horace W. Davenport, Ph.D., for studies of intracellular enzymes of the gastric mucosa.

Ciba Pharmaceutical Products, Inc., $3,000 to the department of pharmacology for research fellowships.

Winthrop Chemical Company, $1,500 for continuation of its fellowship fund for the years 1946-1947 in the department of pharmacology.

Sandoz Chemical Company, $1,000 to the department of pharmacology as an unattached grant for research in the field of epilepsy under the direction of Dr. Goodman.

Committee on Scientific Research, American Medical Association, $1,000 to Dr. George Sayers, Ph.D., assistant professor of pharmacology, for research on pituitary adrenocorticotropic activity.

Dr. Cecil J. Watson, professor of medicine, University of Minnesota Medical School, Minneapolis, delivered the second annual William R. Tyndale Lecture at the school recently on "Clinical Aspects of Hemoglobin Degradation" and "Recent Studies of Hepatitis and Cirrhosis."

WISCONSIN

The Helmholz Lecture.—Dr. Thomas Francis Jr., Ann Arbor, will deliver the fourth annual A. C. Helmholz Lecture at the University of Wisconsin Medical School, Madison, June 20, on "The Conquest of Influenza." The lectureship was endowed in 1941 by the four children of Mr. and Mrs. A. C. Helmholz of Milwaukee.

GENERAL

Will Braun's Testimonial Open to Every One.—An open invitation is extended to any one wishing to attend the reception and testimonial in honor of Will C. Braun at the St. Francis Hotel, San Francisco, July 3. In the San Francisco number of THE JOURNAL, page 300, it was erroneously stated that the dinner is being given by Mead Johnson & Company, an inaccuracy arising from the fact that the details of the dinner are being handled by Mr. A. L. Rose of Mead Johnson & Company, Evansville, Ind. Mr. Rose is acting in behalf of the sponsors of the event, who are Mr. Braun's many friends in the profession and in industries serving the medical profession. Any one wishing to attend the dinner should write to Mr. Rose for complete details.

Medical Memorial Fund.—Establishment of a Medical Memorial Fund to provide financial aid for medical research was announced on May 14. To obtain from $5,000,000 to $10,000,000 a year, it will accept contributions in any amount as memorial gifts. Harlow Shapley, Sc.D., director of the Harvard College Observatory, is chairman of the board of trustees and in a statement to the press said that the fund will conduct a continuing campaign to raise as much of this sum as possible. He explained that gifts to the fund may be made at any time, either immediately after the death of a relative or friend or to honor some one who has died in the past. To make a gift the Medical Memorial Fund should be addressed at 630 West 168th Street, New York 32, with the name of the person in whose memory the gift is made and the name and address of the bereaved person to whom the memorial certificate should be sent. In addition to Dr. Shapley, officers of the Medical Memorial Fund are Henry S. Simms, Ph.D., president; Drs. Russell L. Cecil and John M. Steele, vice presidents; Marvin R. Thompson, Ph.D., secretary, and Guy Emerson, treasurer, all of New York.

Program in Pharmaceutical Education.—On May 9 the American Council on Education announced that it is undertaking a nationwide survey of pharmaceutical education. About $100,000 has been provided by the American Foundation for Pharmaceutical Education to finance the survey under the direction of Edward C. Elliott, Ph.D., formerly president of Purdue University, with the assistance of a technical staff. The plans for the survey include a study of the supply and future demand for trained pharmacists; the practices of the colleges of pharmacy as to the admission, guidance, selection and training of students; analysis of present day prescriptions to determine the knowledge required of the professionally trained pharmacist; the relation of pharmaceutical education to business and industry; the role of pharmacy in medical care; the qualifications of faculty members and the conditions of faculty service in the colleges of pharmacy, and the relation of the requirements for licenses to the programs of training and practical needs. Special attention will be given to methods and means for the training of the scientific specialist now required by the rapidly growing pharmaceutical industries and for pharmaceutical research.

Grants and Fellowships in Cancer Research.—The Committee on Growth of the National Research Council, acting for the American Cancer Society, announces that it will entertain applications for grants in cancer research to become effective July 1, 1947. Applications will be received until Sept. 15, 1946. Applications for fellowships and senior fellowships in cancer research of the American Cancer Society for the ensuing year will be received until Dec. 1, 1946. To date the Committee on Growth has recommended to the American Cancer Society a total of seventy-five research grants and fourteen fellowships. The committee will continue to recommend support of research in the basic sciences and in clinical investigative medicine broadly pertaining to problems of growth. It will continue also to rely heavily for counsel on its advisory divisions of chemistry, biology, physics and clinical investigations and their subjacent panels in specialized areas of research. Applications for research grants for the current year will no longer be entertained. Communications should be addressed to the Committee on Growth, Division of Medical Sciences, National Research Council, 2101 Constitution Avenue, Washington 25, D. C.

Radio Series Dedicated to Medical Profession.—Development of wider public understanding and appreciation of the contribution made by the medical profession and by medical research to the world's health and welfare is the objective of a new series of radio programs which was launched over the Columbia Broadcasting System, June 4, at 9:30 p. m., Eastern daylight saving time. The half hour program, known as "Encore Theater," presents radio dramatizations of famous films, novels and biographies dealing with medicine's immortals, as well as with the work, achievements and struggles of thousands of members of the medical profession who, although bypassed by fame, daily are making substantial contributions to the prevention and cure of disease, often at great personal sacrifice. Sponsor of the program is Schenley Laboratories, Inc., which for the past two years has sponsored a somewhat similar program dedicated to the medical profession, "The Doctor Fights." The programs are designed to underline the scientific achievements of the medical profession while stressing the human warmth and sympathy which often prompt members of the profession to sacrifice health and even life in order to serve others.

The Third Phase of Medical Care.—A report has been issued by the Baruch Committee on Physical Medicine discussing the need for additional rehabilitation services and centers where the disabled and handicapped can receive post-hospital physical rehabilitation, psychosocial adjustment and vocational guidance and retraining. Model community rehabilitation centers, discussed in the report, would not provide definitive medical treatment but would bridge the gap between the bed and the job by following preventive and curative medicine and surgery with what the committee terms "the third phase of medical care." The model center outlined in the Baruch plan is based on an estimated load of 50 dormitory and 200 outpatients. They estimate the average patient stay at two months, which would result in a case load of 1,500 patients a year. Total program costs for physical therapy, occupational therapy, medical services, vocational testing, guidance and retraining and psychosocial adjustment are estimated at $125 per patient, exclusive of dormitory care and food services. Such centers, once established, the committee believes, would be relatively self supporting, as fees would be received from private patients, the Veterans Administration, state rehabilitation programs, industry and insurance companies. Copies of the complete report are available from the Baruch Committee on Physical Medicine, Room 3500, 597 Madison Avenue, New York 22.

LATIN AMERICA

Health Activities in Latin America.—*Personal.*—The Legion of Merit was conferred on Col. Harold B. Gotaas, acting director of the Office of Inter-American Affairs and president of the Institute of Inter-American Affairs, at special ceremonies in Washington recently for "exceptional meritorious conduct in the performance of outstanding services" in conducting the health and sanitation work of the institute.

Bolivia Establishes National Blood Bank.—The Bolivia National Blood Bank is to be set up in the city of Cochabamba, Bolivia. Two Bolivian physicians are in training by the Institute of Inter-American Affairs to take charge of the national plasma project and train other technicians who may be needed.

Chile Opens New Hospitals.—Dr. Theodore I. Gandy, chief of the six man Institute of Inter-American Affairs medical mission to the South American republic, reports that a large modern center of preventive medicine has been completed in the port of Antofagasta and that the 500 bed Trudeau Tuberculosis Hospital in Santiago will be ready for use shortly. The United States field party, working with Chilean health officials in the Inter-American Cooperative Department of Public Health, helped to plan both of these institutions.

New Minister of Education and Health.—Dr. Ernesto de Souza Campos, formerly professor of bacteriology, São Paulo School of Medicine, Brazil, has been appointed minister of education and health of Brazil. According to the *News Letter* of the Health and Sanitation Division, Institute of Inter-American Affairs, the new minister informed Dr. Eugene P. Campbell, chief of the Institute of Inter-American Affairs field party in Brazil, that no changes are planned in regard to the administration of Servicio Especial de Saude Publica, the cooperative public health program in Brazil, now almost 4 years old.

Sanitation Engineer Honored.—A new modern hospital in the jungle city of Guayamerin will be named for Major Curtis E. Richey of Des Moines "as a tribute to the work he performed in our tropical region as a member of the Institute of Inter-American Affairs, and of the Bolivian Servicio Cooperativo Inter-Americano de Salud Publica." Major Richey, a former official of the Iowa State Public Health Department, went to Bolivia with the Inter-American Affairs medical field party in 1943. He helped to set up small modern hospitals in Guayamerin and Riberalta at the headwaters of the Amazon and directed a campaign against tropical disease in both areas, which were important producers of wild rubber during the early part of the war. According to reports published recently in the La Paz press, the health work which Major Richey directed was instrumental in transforming Guayamerin from a malaria ridden small town of a few hundred people into a thriving city about three times its former size. Malaria is no longer a problem there, and the general death and morbidity rates are lower in the jungle settlement than they are in towns in "healthful" regions.

Inter-American Medical Congress.—The National Academy of Medicine, Rio de Janeiro, Brazil, will sponsor the first Inter-American Medical Congress, September 7-15. Information may be obtained from Dr. A. Austregesilo, president of the congress, or Dr. Al Cumplido de Sant Anna, general secretary.

First Regional Conference on Sanitary Engineering.—The Pan American Sanitary Bureau in cooperation with the Institute of Inter-American Affairs is planning to inaugurate the first regional conference on sanitary engineering in Latin America. This conference is scheduled to be held in Rio de Janeiro, Brazil, the week of June 10. It is planned that sanitary engineers from Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, Uruguay and the United States of America will participate in the conference. The objectives of the conference are advancement of the profession of sanitary engineering, exchange of scientific data and ideas in the development of sanitary engineering in the Americas, to promote the development of standards for sanitation in regard to international travel, to accelerate the development of sanitation in the Americas to aid in the economic development, to create a better understanding between the engineers of the American republics and to organize a permanent Pan American organization of sanitary engineers.

Congress on Cardiology.—The second Inter-American Congress of Cardiology will be held in Mexico City, October 6-12, at the National Institute of Cardiology, Calzada de la Piedad 300, Mexico, D. F., under the auspices of the Inter-American Society of Cardiology, American Heart Association, Argentine Society of Cardiology, Cuban Society of Cardiology, Mexican Society of Cardiology, National Institute of Cardiology of Mexico, Ministry of Health of Mexico, Ministry of Foreign Relations of Mexico and the National University of Mexico. Additional information may be obtained from Dr. Mario Salazar Mallén, general secretary of the congress.

FOREIGN

Model Medical Centers in China.—Plans to establish model medical centers in China to rebuild the country's medical system were announced by the press on April 23. The program is sponsored by the Chinese government with the cooperation of the American Bureau for Medical Aid to China. The first medical centers will be built in Shanghai and places to be designated in North and South China. Later units are planned for western and central China.

Effect of War on Russian Health.—The American Society for Russian Relief reports that 40,000 hospitals, clinics and other medical institutions were destroyed by the Nazis during their invasion and occupation of the Soviet Union, giving implication for an estimated 15,000,000 war wounded, 4,000,000 children orphaned and war shocked, 1,000,000 youngsters suffering from rickets and other diseases of malnutrition and 1,000,000 amputation cases in which rehabilitation cannot be effected in the immediate future. The statement is released in the society's 1945 program for Russian relief. The campaign hopes to obtain $25,000,000 for the purchase of medical supplies and hospital equipment. Also as part of its medical campaign Russian relief will undertake to equip a network of hospitals and workshops and an affiliated factory specifically for the treatment of 1,000,000 civilian and military amputees in the Soviet Union. Detailed information on this program may be obtained by writing to the American Society for Russian Relief, 5 Cedar Street, New York 5.

CORRECTION

Jaundice Following Yellow Fever Vaccination.—In the third line of the editorial with this title (THE JOURNAL, May 11), page 142, the words "increase in the" should follow the word "thirty-six-fold." Also the second word in the sentence beginning just below should read "incubation" instead of "inoculation."

Deaths

Robert Wilson ✦ Charleston, S. C.; born in Stateburg, S. C., Aug. 23, 1867; Medical College of the State of South Carolina, Charleston, 1892; joined the faculty of his alma mater in 1893, serving as instructor in bacteriology until 1900, from 1901 to 1903 adjunct professor, later professor of medicine and dean and since 1943 dean emeritus and professor emeritus and special lecturer on medical history; chairman of the state board of health from 1907 to 1931; First Vice President of the American Medical Association, 1909-1910; president of the South Carolina Medical Association, 1904-1905, of which he had been an honorary member, the Southern Medical Association, 1915-1916 and the Tri-State Medical Association of the Carolinas and Virginia, 1927-1928; member of the American Clinical and Climatological Association, American Heart Association and the National Tuberculosis Association; fellow of the American College of Physicians; on the staff of the Roper Hospital; specialist certified by the American Board of Internal Medicine; in 1939 the American Legion, department of South Carolina, presented him with its plaque for distinguished service to South Carolina; received honorary degrees from the University of South Carolina and the University of the South in Sewanee; died May 20, aged 78, of coronary thrombosis complicated with pneumonia.

James Watson White ✦ New York; Albany (N. Y.) Medical College, 1905; born in Dutchess County, N. Y., July 3, 1876; professor of clinical ophthalmology at the New York Post-Graduate Medical School and Hospital, Columbia University, where he was director of the service; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, New York Ophthalmological Society and the Association for Research in Ophthalmology; fellow of the New York Academy of Medicine; formerly associated with the Herman Knapp Memorial Hospital in New York; on the consulting staffs of the Newark (N. J.) Eye and Ear Infirmary, Brooklyn Eye and Ear Hospital, Essex County Contagious Disease Hospital in Belleville, N. J., Roosevelt Hospital in New York and the Mountainside Hospital in Montclair, N. J., where he died May 15, aged 69.

Lucius Arthur Wing ✦ New York; Cornell University Medical College, New York, 1907; born in 1882; associate professor of clinical obstetrics and gynecology at his alma mater; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; associate attending obstetrician and gynecologist at the New York Hospital; consulting obstetrician to the Margaret Hague Maternity Hospital, Jersey City, N. J., and the Nassau Hospital, Mineola, N. Y.; died in Southfield, Mass., February 17, aged 63, of coronary thrombosis.

Edward E. Barlow ✦ Dermott, Ark.; Memphis (Tenn.) Hospital Medical College, 1902; born in Eaton, Ill., in 1873; member of the House of Delegates of the American Medical Association from 1939 to 1943; past president of the Arkansas Medical Society; fellow of the American College of Surgeons; past president of the local school board; founder of the Barlow Clinic and leader in the building of the Dermott Municipal Hospital; first secretary of the Dermott Chamber of Commerce and a charter member and past president of the local Rotary Club; died in the Baptist Hospital, Memphis, Tenn., February 6, aged 72, of coronary thrombosis.

Walter De Witt Shelden ✦ Rochester, Minn.; Rush Medical College, Chicago, 1895; professor emeritus of neurology and psychiatry at the University of Minnesota Graduate School; member of the American Neurological Association, of which he had been vice president, Minnesota Society of Neurology and Psychiatry; Central Neuropsychiatric Association; Osler Medical Historical Society and the Alumni Association of the Mayo Foundation; died February 13, aged 76, of dilatation of the left ventricle and healed rheumatic endocarditis.

John Winston Adams Sr., ✦ Chandler, Okla.; University of Louisville Medical Department, 1905; served as medical director of the Chandler Sanitarium; died February 24, aged 67, of cerebral hemorrhage.

Belle Jane Allen, Kasauli, India; Boston University School of Medicine, 1904; served as a missionary; died January 24, aged 84.

John Pearl Allen, Cairo, Mo.; Barnes Medical College, St. Louis, 1904; member of the American Medical Association; died February 9, aged 69, of carcinoma.

William Wesley Anderson ✦ Fort Thomas, Ky.; Medical College of Ohio, Cincinnati, 1893; born in Weisburg, Ind., Oct. 9, 1866; a major in the medical corps of the U. S. Army during World War I; fellow of the American College of Physicians; formerly affiliated with U. S. Veterans Bureau in Cincinnati; died in the Speer's Hospital, Dayton, April 2, aged 79, of anterior coronary occlusion.

Edward Young Anthony, Omaha, Texas (licensed in Texas under the Act of 1903); member of the American Medical Association; for many years secretary of the Morris County Medical Society; member of the Selective Service examining board during World War II; died January 21, aged 75, of uremia.

George Edgar Armour, St. Ignatius, Mont.; Sioux City (Iowa) College of Medicine, 1905; also a graduate in pharmacy; member of the American Medical Association; had been affiliated with the Indian Service; died in January, aged 65, of cerebral hemorrhage.

Herbert Burr Bailey ✦ Fairmont, Minn.; University of Minnesota Medical School, Minneapolis, 1913; died in the Community Hospital February 11, aged 62, of coronary thrombosis and hypertensive heart disease.

Louis Andrew Balcke ✦ Pekin, Ill.; Northwestern University Medical School, Chicago, 1932; entered the medical corps of the U. S. Naval Reserve on May 10, 1943; served nine months on a small island off Australia; later stationed in Bloomington, Ill., where he was an examining physician for the V-12 candidates at Illinois State Normal University; recently released from active duty; died in St. Louis February 24, aged 41.

James Asher Caldwell ✦ Southgate, Ky.; Medical College of Ohio, Cincinnati, 1901; formerly member of the county board of health; staff member and member of the board of trustees of the Speer's Memorial Hospital, Dayton, where he died February 26, aged 74, of cerebral hemorrhage.

Lewis Walter Frank Carpenter, Reasnor, Iowa; Drake University College of Medicine, Des Moines, 1904; member of the American Medical Association; died February 24, aged 78, of coronary sclerosis.

Henry Charles, Brooklyn; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1921; died in January, aged 56.

Thompson Coberth ✦ The Dalles, Ore.; University of Oregon Medical School, Portland, 1911; fellow of the American College of Surgeons; past president and vice president of the Oregon State Medical Society; formerly member of the state board of health; served in France during World War I; for many years associated with The Dalles Hospital; died January 13, aged 57, of dilatation of the heart.

F. Homer Curtiss, Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1909; died in the Doctors Hospital February 5, aged 70, of cerebral hemorrhage and coronary occlusion.

James David Daniel, Daniels Landing, Tenn.; University of Tennessee College of Medicine, Nashville, 1896; also a druggist; died in the General Hospital, Nashville, February 11, aged 77, of massive pulmonary hemorrhage.

Charles King Dutton, Moberly, Mo.; Marion-Sims College of Medicine, St. Louis, 1895; vice president and director of the City Bank and Trust Company; found dead February 18, aged 75, of heart disease.

Walter Harmon Dyer ✦ Tampa, Fla.; Atlanta College of Physicians and Surgeons, 1911; died February 9, aged 57, of coronary thrombosis.

Louis Lee Edwards ✦ San Marcos, Texas; Memphis (Tenn.) Hospital Medical College, 1910; fellow of the American College of Surgeons; on the staff of the Soldiers' and Sailors' Memorial Hospital; died January 14, aged 64, of coronary thrombosis.

Henry S. Fendler, Santa Monica, Calif.; Baltimore University School of Medicine, 1898; veteran of the Spanish-American War; died January 7, aged 72.

James Watkins Fennell, Missoula, Mont.; University of Nashville Medical Department, 1907; member of the American Medical Association; served with a Johns Hopkins unit in World War I; affiliated with the Northern Pacific Beneficial Association Hospital; died February 23, aged 60, of virus pneumonia.

Harry L. Fiscus, Reinersville, Ohio; Baltimore University School of Medicine, 1897; served as county coroner and on the staff of Marietta (Ohio) Hospital; died January 6, aged 75, of coronary thrombosis.

William Ernest Floyd, Holdenville, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1903; member of the American Medical Association; county superintendent of public health; died near Lincoln, Ark., January 22, aged 65, of virus pneumonia.

William Henry Gilbert ✦ Los Angeles; Bellevue Hospital Medical College, New York, 1889; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; served during World War I; died in the Veterans Administration Facility, Sawtelle, February 3, aged 78, of arteriosclerotic heart disease.

Enea Augusto Gius ✦ San Francisco; Regia Università degli Studi di Firenze. Facolta di Medicina e Chirurgia, Italy, 1921; member of the hospital corps of the Italian army during World War I; served as clinical instructor in pediatrics at the University of California Medical School; died January 5, aged 52, of acute bronchial obstruction and pulmonary atelectasis.

John Henry Goebel, Racine, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1909; on the staff of St. Luke's Hospital; died February 1, aged 62, of lobar pneumonia and chronic nephritis.

Martin Luther Golberg, Minneapolis; Minneapolis College of Physicians and Surgeons, 1901; member of the American Medical Association; died February 26, aged 69, of coronary thrombosis.

Harry Templar Guss, St. Petersburg, Fla.; Jefferson Medical College of Philadelphia, 1886; formerly employed in the insurance medical section of the U. S. Veterans Bureau; died January 19, aged 86.

Morris H. Herzman ✦ Chicago; Jenner Medical College, Chicago, 1898; died February 4, aged 78, of coronary thrombosis.

George Yerger Hicks, Dallas, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1932; interned at the Southern Baptist Hospital in New Orleans; served a residency at the Mississippi State Charity Hospital, Vicksburg, Miss.; served in the medical corps, Army of the United States, during World War II; formerly associated with the city health department; died in a local hospital January 11, aged 39, of gastric hemorrhage.

Albertus Tribue Hoxie, Dearborn, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1901; died in the Wayne County General Hospital, Eloise, February 8, aged 85, of arteriosclerosis.

John Rogers Hudson, St. Louis; College of Physicians and Surgeons of Chicago, 1896; served during the Spanish-American War; died January 3, aged 89.

Frank Orville Hunt, Fall River, Wis.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; member of the American Medical Association; served as health officer of Fall River; died February 8, aged 78, of coronary thrombosis.

Fayette Lane Inslee ✦ Le Raysville, Pa.; Medico-Chirurgical College of Philadelphia, 1898; past president of the Bradford County Medical Society; examining physician for the draft board during World War I; for many years school director and physician for the board of health; died February 8, aged 74, of angina pectoris.

George Wiley King, Atlanta, Ga.; University of the South Medical Department, Sewanee, Tenn., 1896; died January 12, aged 73, of cardiovascular renal disease.

Arthur Lewis Loebel, New Orleans; Chicago Medical School, 1945; assistant surgeon, U. S. Public Health Service, Reserve; died January 12, aged 28.

Charles Hodge Lyon ✦ Phillipsburg, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; formerly a medical missionary; served during World War I; for many years designated medical examiner for Phillipsburg for the Veterans Administration; on the staff of the Warren Hospital; died April 19, aged 72, of carcinoma of the liver.

William Tarlton McCurdy, Stone Mountain, Ga.; Atlanta Medical College, 1897; died February 13, aged 70, of myocardial heart disease.

Jesse H. Martin, Selma, Ala.; Mississippi Medical College, Meridian, 1909; Memphis (Tenn.) Hospital Medical College, 1910; member of the American Medical Association; died January 31, aged 64.

Clarence Warren Mehlhop, Washington, D. C.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1899; served during World War I; for many years affiliated with Veterans Administration; died in the U. S. Naval Hospital, Bethesda, Md., January 19, aged 73.

Wendell Holmes Montgomery ✦ Louisville, Ohio; University of Pittsburgh School of Medicine, 1921; served during World War I; died January 20, aged 53.

Francis Joseph Mulligan, Newton, Mass.; Boston University School of Medicine, 1928; member of the American Medical Association; examining physician for the city health department; on the courtesy staff of the Waltham (Mass.) Hospital; on the staffs of Newton-Wellesley Hospital in Newton and St. Elizabeth's Hospital in Boston, where he died February 5, aged 44, of rheumatic heart disease.

Pirl B. Myers ✦ El Reno, Okla.; National University of Arts and Sciences Medical Department, St. Louis, 1912; died March 24, aged 57, of coronary occlusion.

Leo Lewis Newfield, Los Angeles; University of Michigan Medical School, Ann Arbor, 1921; died January 3, aged 51.

Elmer Ree Newland ✦ Drakesville, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1904; died February 6, aged 66, of coronary thrombosis.

Charles Hannibal Nims ✦ Hot Springs National Park, Ark.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; member of the Radiological Society of North America, Inc.; served during World War I; died February 6, aged 75, of paralysis agitans with progressive degenerative myocarditis.

George Henry Noble, St. Augustine, Fla.; Columbia University College of Physicians and Surgeons, New York, 1917; died February 11, aged 55, of coronary thrombosis.

Richard Smith Pickler ✦ Beloit, Kan.; John A. Creighton Medical College, Omaha, 1912; served in France during World War I; died February 23, aged 61, of heart disease.

Frederick James Port ✦ Peoria, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; past president of the Christian County Medical Society; formerly surgeon for the Peabody Coal Company in Taylorville; died February 15, aged 59, of coronary thrombosis.

Samuel P. Radin ✦ Aliquippa, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1906; died February 11, aged 64, of coronary thrombosis.

Charles Clay Reed Sr., ✦ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1906; on the staffs of the Baptist State Hospital and St. Vincent's Infirmary, where he died February 16, aged 71, of coronary occlusion.

Joseph Lorain Reed, Wilmot, Ohio; Ohio Medical University, Columbus, 1897; died January 17, aged 78.

Charles Washington Reid, Pelham, Ga.; Atlanta Medical College, 1882; member of the American Medical Association; served as president and secretary of the Mitchell County Medical Society; charter member of the local board of education; died January 1, aged 87.

William Gifford Rice, Cheboygan, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; served on the staff of the Little Traverse Hospital in Petoskey; died February 4, aged 76, of coronary occlusion.

Edgar T. Riley, Frenchburg, Ky.; University of Louisville Medical Department, 1896; member of the American Medical Association; health officer of Menifee County for many years; died February 15 at Elkton, aged 71, of cerebral hemorrhage.

Herman Call Runyan, Alexandria, Ind.; Rush Medical College, Chicago, 1906; member of the American Medical Association; served during World War I; health officer; died January 8, aged 68, of acute circulatory collapse.

James H. Sanderson, Detroit; Michigan College of Medicine and Surgery, Detroit, 1890; member of the American Medical Association; formerly secretary of the Wayne County Medical Society; died January 30, aged 84, of carcinoma.

Bernard Schlossmann ✦ Milwaukee; Rush Medical College, Chicago, 1919; died in the Mount Sinai Hospital January 27, aged 53, of carcinoma of the rectum.

Irvin William Sherwood, Columbus, Ohio; Starling Medical College, Columbus, 1901; member of the American Medical Association; died December 31, aged 76.

George Francis Shiley ✦ Seattle; State University of Iowa College of Medicine, Iowa City, 1903; for many years affiliated with the city health department; died in February, aged 69, of pneumonia.

James Rex Sholl, St. Petersburg, Fla.; Chicago Homeopathic Medical College, 1904; also a D.D.S.; served during World War I; at one time health officer of Peoria, Ill.; died February 21, aged 65, of carcinoma of the cecum.

Charles Sherman Smith, Clarkesville, Ga.; University of the City of New York Medical Department, New York, 1892; member of the American Medical Association and the Rhode Island Medical Society; died February 11, aged 82, of organic heart disease.

Albert L. Smither, Chaplin, Ky.; University of Louisville (Ky.) Medical Department, 1888; died February 25, aged 84, of injuries received in an automobile accident.

A. H. Sorrelle, Brownsville, Tenn.; Memphis Hospital Medical College, 1907; member of the American Medical Association; died January 10, aged 64.

Lester James Spinharney, Cherokee, Iowa; Creighton University School of Medicine, Omaha, 1923; member of the American Medical Association; served as city health officer; died February 14, aged 46, of coronary thrombosis.

Robert Sponner, Milwaukee; Medizinische Fakultät der Universität Wein, Vienna, Austria, 1904; member of the American Medical Association; died in Tucson, Ariz., February 3, aged 66, of arteriosclerotic heart disease.

Harry Frank Stamos ✠ Detroit; University of Michigan Medical School, Ann Arbor, 1929; interned at St. Joseph's Mercy Hospital, where he was staff consultant; began active duty as lieutenant commander in the medical corps of the U. S. Naval Reserve, April 1, 1942; retired June 29, 1943; died December 12, aged 42.

Edmund Arthur Steenburg ✠ Aurora, Neb.; Rush Medical College, Chicago, 1887; served as president of the Hamilton County Medical Society; died February 1, aged 80, of pulmonary embolism.

Frank Stockman, New York; Long Island College Hospital, Brooklyn, 1905; died January 7, aged 68, of carcinoma of the stomach.

Charles Wright Stoughton, Westerville, Ohio; Ohio Medical University, Columbus, 1901; died February 23, aged 72, of diabetes mellitus.

Charles Clifton Stroup, Bloomington, Ind.; Rush Medical College, Chicago, 1900; for many years school physician; died February 14, aged 74, of arterial hypertension.

Longin Tabenski ✠ Chicago; Chicago College of Medicine and Surgery, 1914; served during World War I; member of the staff of St. Mary of Nazareth Hospital; died in the Veterans Administration Facility, Hines, February 15, aged 59, of coronary heart disease.

Oliver P. Templeton, Fairfax, Mo.; Physio-Medical Institute, Cincinnati, 1878; also a druggist; died in the Missouri Methodist Hospital, St. Joseph, February 2, aged 91, of uremia.

Michael H. Thielen, Grundy Center, Iowa; State University of Iowa College of Medicine, Iowa City, 1898; member of the American Medical Association; died in St. Francis Hospital, Waterloo, February 24, aged 79, of pneumonia and uremia.

William C. Thompson, Waterloo, S. C.; Chattanooga Medical College, 1900; died December 19, aged 71.

John William Tinder, Detroit; Medical College of Indiana, Indianapolis, 1892; served during World War I; died February 5, aged 81, of cerebral hemorrhage.

William Marshall Trowbridge ✠ Viroqua, Wis.; Chicago Homeopathic Medical College, 1893; member of the board of pension examiners for Vernon County; died in Rochester, Minn., January 23, aged 79, of pneumonia.

Eldridge Curts Turner, Sacramento, Calif.; University of California Medical Department, San Francisco, 1905; member of the American Medical Association; on the staff of the Mercy Hospital, where he died February 9, aged 62, of heart disease.

Wilson Lewis Vickers ✠ Franklin, Ky.; Vanderbilt University School of Medicine, Nashville, 1915; owner of the Vickers Hospital, where he died February 13, aged 61, of bronchopneumonia.

Frederick Symonds Wakefield, Lewiston, Maine; Columbia University College of Physicians and Surgeons, New York, 1899; member of the American Medical Association; ophthalmic surgeon emeritus at the Central Maine General Hospital, where he died January 20, aged 72, of chronic uremia, bilateral hydronephrosis due to chronic urinary retention and prostatic hypertrophy.

Wiley H. Ward, Cumby, Texas (licensed in Texas under the Act of 1907); died February 13, aged 79, of coronary heart disease.

Charles Thomas Way ✠ Cleveland; Western Reserve University School of Medicine, Cleveland, 1921; assistant clinical professor of medicine at his alma mater; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past president of the Academy of Medicine of Cleveland; on the staff of St. Luke's Hospital; died in the University Hospitals February 4, aged 50, of bronchopneumonia and cardiovascular renal disease.

Henry Emerson Wetherill, Audubon, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; died March 4, aged 74, of heart disease.

Carl C. White, Mathews, Va.; Baltimore Medical College, 1897; secretary of the county board of health; died February 3, aged 77, from a fracture of the hip incurred in a fall.

James D. Whittaker, Cannel City, Ky.; Kentucky School of Medicine, Louisville, 1894; member of the American Medical Association; formerly state senator; died January 23, aged 74, of arteriosclerotic heart disease.

Ozion Price Wilson, Moundsville, W. Va.; Kentucky University Medical Department, Louisville, 1904; member of the American Medical Association; member of the staff of the Reynolds Memorial Hospital in Glen Dale; for many years physician for the West Virginia Penitentiary; died February 16, aged 68, of coronary thrombosis and hypertensive heart disease.

Alfred Millard Wose ✠ Syracuse, N. Y.; Harvard Medical School, Boston, 1901; assistant professor of clinical surgery (urology) at the Syracuse University College of Medicine; member of the American Urological Association and the Syracuse Academy of Medicine; on the staffs of St. Joseph's and Syracuse Memorial hospitals; died February 13, aged 69, of coronary occlusion.

H. Sanford Yost, Fairmont, W. Va.; Indiana Eclectic Medical College, Indianapolis, 1890; died February 17, aged 77, of cerebral hemorrhage.

PUBLIC HEALTH SERVICE

Carl Michel ✠ Rear Admiral, Assistant Surgeon General, U. S. Public Health Service, Washington, D. C.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1912; born in Chicago May 4, 1890; following his internship in the U. S. Marine Hospital in Chicago was detailed to assist the Indiana State Board of Health during the floods of 1913; appointed an instructor in bacteriology at his alma mater; later detailed work on plague eradication measures in New Orleans and studied the etiology of pellagra at Rankin State Farm Mississippi; later assigned at Ellis Island, N. Y.; on declaration of World War I was temporarily transferred from the public health service to assignment as medical officer in the Coast Guard; this duty terminated in February 1918, when he was attached to the hospital division of the public health service, Washington, D. C.; in 1921, at the request of the Mexican government, he was ordered to Tampico, Mexico, to institute control measures in an outbreak of bubonic plague; an outbreak of plague in Los Angeles in July 1925 resulted in duty at that city, to be followed by another detail at Seattle; in August 1927 was transferred to Arkansas for flood relief work and the organization of twenty-three county health units; during an assignment to Miami, Fla., in the summer of 1930, organized a standard airplane quarantine system and was first to call attention to the fact that airplanes may carry mosquitoes, bringing such diseases as yellow fever, and was instrumental in establishing a system of inspection of airplanes to eliminate this danger; in 1932, in conjunction with Pan American Airways, designed plans for airplane quarantine stations which were incorporated into a new airplane terminal at Miami; after five years as chief medical officer of the U. S. Coast Guard Academy at New London, Conn., reported to Coast Guard headquarters in July 1940 for duty as chief medical officer; since that time the medical division has expanded to many times its former size and much progress has been made under his direction in relation to constructing additional medical and dental facilities for the wartime personnel of this branch of the service; in November 1943 became assistant surgeon general with the rank of rear admiral; died in the U. S. Naval Hospital, Bethesda, Md., January 3, aged 55, of cerebral hemorrhage.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 4, 1945.

Second Reading of National Health Service Bill

The minister of health, Mr. Aneurin Bevan, has at last published his proposals for a national health service. In moving the second reading of the bill in the House of Commons he said that the first reason why a health scheme was necessary was that all parties agreed that money ought not to stand in the way of obtaining an efficient health service. The national health insurance system already provided a general practitioner service for 21 million, but the rest of the people had to pay whenever they desired the services of a doctor. A person ought not to be financially deterred from seeking medical assistance at the earliest stage. One of the evils of having to buy medical advice was anxiety about doctors' bills. In an overwhelming number of cases the services of specialists were not available to poor people. Further, our hospital organization had grown up with no plan or system. It was unevenly distributed over the country, and often the best hospital facilities were available where least needed. Many hospitals were much too small. About 70 per cent had fewer than 100 beds, and over 30 per cent fewer than 30. To be efficient a hospital must provide specialist services, which small hospitals could not. In other respects the health of the people was not properly looked after. Their teeth were a reproach, and there was a woful shortage of dentists. Only 25 per cent of the people could get their eyes tested and obtain spectacles. Sufficient attention had not been paid to deafness and the provision of cheap hearing aids.

One of the first merits of the bill was that it provided a universal health service and was intended to universalize the best health advice and treatment. The three main instruments were the hospitals, general practitioners and health centers. The hospitals in many ways were the vertebrae of the health system, but it was repugnant that they should have to rely on private charity. In the future 80 to 90 per cent of the revenue of the voluntary hospitals would be provided by public funds, and they could no longer be called voluntary. His decision that the voluntary system must go had given rise to considerable resentment. How could the voluntary hospitals be articulated with the municipal ones? The only course was to create an entirely new hospital service to take over both. By grouping the hospitals round the medical schools they would provide what was badly needed—means by which the general practitioner would be kept in more intimate association with new medical thought, practice and training. One of the shortcomings of the existing medical service was the intellectual isolation of the general practitioner in many areas. The appropriate hospital unit was 1,000 beds. Specialist service could be provided only with a grouping of that size. The hospitals would be administered by regional boards drawn from members of the medical profession, major public health authorities in the area, medical schools and those experienced in voluntary hospital administrations.

As to the general practitioner service, his proposal was that general practitioners should not be in direct contact with the Ministry of Health but in contact with new bodies, on which doctors, dentists and pharmacists would have half representation. The whole scheme would give a greater degree of medical representation than ever before. It would strengthen democracy by giving doctors full participation in the administration of their own profession. They would not become civil servants. Regarding the distribution of doctors, he regarded the present condition as most harmful to the health of the people. He gave figures showing a variation in different towns from one doctor to 4,100 persons to one to 1,200. If the country was to get doctors where they were most needed, it could not allow a doctor to go to a particular area because he had bought a practice. He always regarded the sale of medical practices as an evil; it was tantamount to the sale of patients. With regard to remuneration, the profession was not ripe for a fully salaried service. There must be some reward for zeal. He therefore proposed that capitation should remain the main source of income, but there would be a basic salary.

Health centers would vary in size. There would be larger ones with dental clinics, maternity and welfare services and general practitioner consultative facilities, and smaller ones where the practitioner could see his patients.

OPPOSITION TO THE BILL

Mr. Willink, minister of health in the coalition government, moved an amendment: "That this House, while wishing to establish a comprehensive health service, declines to give second reading to a bill which prejudices the patient's right to an independent family doctor, which retards the development of hospital services by destroying local ownership and gravely menaces all charitable foundations by diverting to purposes other than those intended by the donors the trust funds of the voluntary hospitals and which weakens the responsibility of the local authorities without planning the health service as a whole." Mr. Willink said that the opposition totally disagreed with the intention of the labor party to organize the medical profession as a national full time, salaried pensionable service. The bill would enable this to be accomplished in time. This view is confirmed by a reply made later in the debate by Mr. Bevan. When challenged on the point he said "There is all the difference in the world between plucking fruit when it is ripe and plucking it when it is green." Another argument used against the bill was opposition of the great majority of the medical profession and of the three Royal Colleges of Physicians, Surgeons and Obstetrics and Gynecology. After a protracted debate extending over three days the opposition amendment was negative by 359 votes to 172, and the bill was read a second time.

MOSCOW

(From Our Regular Correspondent)

April 2, 1946.

Thirty-Six Days of Starvation in the Open Sea

An interesting case of prolonged starvation was recently reported in the *Naval Military Surgeon* by Capt. P. Yeressko Jr. of the Naval Medical Corps of the Black Sea. Captain Yeressko left the Crimea in July 1942, when the Nazi troops invaded the peninsula, in a small boat with three comrades; they had only one small flask of fresh water and three cans of preserved fish for food. The crew rowed in turn during the first three days, but rowing soon became impossible. They decided to lie quietly without moving or speaking. The feeling of hunger was very strong for the first week, but later it diminished; nevertheless, the thoughts of the crew were continually about eating. By the end of the third day all fresh water was gone. Captain Yeressko proposed that they drink sea water, to which all four men gradually became accustomed. By chance it was noticed that tablets for chlorinating water gave it a somewhat better taste. Later the four men became so accustomed to sea water that on the fifth day all could drink about a quart and a half daily. However, when it was possible the crew enthusiastically drank rain water.

During the first fifteen days there was a keen feeling of starvation, backache, ache in the muscles of feet, fatigue, shortening of work capacity, reduction of weight, decrease of the pulse rate (about 56 per minute), decreased sweating, and dryness of the skin. These symptoms became more intense after the fifteenth day, and nervous and psychic symptoms such

as hallucinations and loss of consciousness were added. The first member of the crew died on the nineteenth day, the second on the twenty-fourth day and the third on the thirtieth day of starvation. Captain Yeressko was rescued unconscious by a passing ship on the thirty-sixth day of starvation. He lost 22 Kg. during those five weeks. On the seventh day after rescue, when eating meat for the first time instead of the usual tea, gastric distress with diarrhea developed and was controlled only after treatment with hydrochloric acid and pepsin.

Although more than two years have passed, Captain Yeressko notes that fresh water and ordinary food still taste undersalted.

The Death of Alexis Zavarzin

Prof. Alexis Zavarzin died on July 25, 1945 after a disease of long duration. He received his scientific education from the Russian histologist A. Dogel and soon became a brilliant research worker. In 1914 he became a privatdozent in the University of St. Petersburg, and in 1916 he was elected professor at the University of Perm. In 1922 he assumed the chair of histology and embryology in the Military Medical Academy and later in the Naval Medical Academy. He was one of the founders of the All-Union Institute of Experimental Medicine, where he headed the anatomy department until his death. Zavarzin's principal work, "Essays on Evolutional Histology of the Nervous System," is considered the best monograph of Soviet scientific literature. He received for this work the Stalin Award. In 1943 he was elected a member of the Soviet Academy of Sciences. He did not cease work during the war and though evacuated to Tomsk in Siberia began to write a monograph on the evolution of the connective tissue. He published more than a hundred scientific works.

COPENHAGEN

(From a Special Correspondent)

April 24, 1946.

BCG Vaccination in Denmark

Much work on BCG vaccination against tuberculosis was carried out in different parts of Denmark during the war, and if it had not been for the inhibitory influence of the German occupation and the engrossing interest of diphtheria immunization BCG vaccination would have been carried out on a nationwide scale. Even so, the experience gained during the war has proved far reaching and instructive. There are two main reasons why this measure has gained so much ground of late. The first concerns its intrinsic merits. The second hinges on the fact that it has been sponsored by the State Serum Institute and other influential bodies representing the most expert talent in the country. In December 1945 the public health authorities conferred with the Danish National Association against Tuberculosis with a view to calling a representative conference early in 1946. When it was held in February of this year its members included a representative cross section of the Danish medical profession. One of the reports presented to this conference dealt with the experiences of all the tuberculosis dispensaries in the country. This report showed that BCG vaccination was carried out so systematically among tuberculin negative school children between 1940 and 1945 that in another two years all school children between the ages of 10 and 14 requiring such immunization will have undergone it.

New Maternity Welfare Legislation

For some years before the second world war Danish medical practitioners had united in a voluntary system of maternity welfare with special reference to prophylactic measures during pregnancy. This movement was outside the scope of the health insurance societies which were pledged to therapeutic but not to prophylactic activities on behalf of expectant mothers. The movement has now been changed from an unofficial and voluntary basis to an official footing by the adoption of the Pregnancy Hygiene Law on Oct. 1, 1945 by the Rigsdag. This law came into force in December last year and provides for three prophylactic medical examinations by a doctor and up to seven examinations by a midwife for every pregnant woman requesting such examination free of charge. The state, not the health insurance societies, defrays the expenses of this measure, the adoption of which so soon after the end of the war was hastened by the great increase of syphilis during the war. After discussions with the Danish Medical Association and the Danish Association of Midwives, the government fixed the remuneration for doctors at 10 kroner for the first examination, 5 kroner for each of the two following examinations and 3 kroner for each examination by a midwife. The medical examination includes a Wassermann test at the State Serum Institute free of charge. There is not any fee for medical examination if pregnancy is not demonstrable. The first medical examination is to be made at the beginning of pregnancy and is to include the Wassermann test. The second examination should be about the middle of pregnancy and the third examination about six weeks before confinement is expected. The framers of this law have been careful to invoke the aid of the general practitioner rather than that of a selected group of specialists in this scheme. This will maintain the interest of general practitioners in the movement and they will be encouraged more than ever to link preventive with therapeutic measures.

Diphtheria Immunization in Copenhagen

The work of the State Serum Institute and of the Blegdam Fever Hospital serving Copenhagen has recently been correlated and studied by Dr. J. Ipsen. He has investigated the diphtheria immunity of the adult population of Copenhagen and has found that persons who had contracted diphtheria more than fifteen years earlier did not possess more antitoxin than those who had never contracted this disease. One of the most remarkable findings is the shift of the age incidence of diphtheria in recent years. Until 1941 the ratio of child to adult cases of diphtheria was 5 to 1. In 1941 the voluntary vaccination of children in Copenhagen against diphtheria became general, and when the last wave of diphtheria began in 1943 the ratio of child to adult cases was 1 to 1.8 and in 1944 it was 1 to 2.2. In the same year more than 90 per cent of all the children in Copenhagen between the ages of 4 and 15 had been vaccinated. This shifting of the age incidence of diphtheria has been accompanied with a greatly increased mortality rate, which in 1943 and 1944 was between 8 and 9 per cent, as compared with 2 to 4 per cent earlier. Dr. Ipsen suggests that this change must be attributed to the sudden appearance in 1943 of the "gravis type." His investigation of the antitoxin content of the blood in vaccinated persons is all the more valuable because the same technic and the same vaccine are employed everywhere in Denmark. The interval between the first and second injections is one month and between the last two injections is one year. Dr. Ipsen concludes from his investigations that "the Danish vaccine has stood the test of a serious epidemic."

Marriages

James E. Fender, Bamberg, S. C., to Miss Betty Petty of Belleville, Ill., in St. Louis, March 23.

James K. Cunningham, Newark, Ohio, to Miss Ann Loren Wilson at Camp Lejeune, March 30.

Reid Hogan Anderson, Pullman, Wash., to Miss Uva Louise Teiser of Henderson, N. C., April 22.

Stanton L. Collins, Fort George Mead, Md., to Miss Anne Keith of Columbia, S. C., April 7.

John C. Hanley to Miss Ruth Grey Argersinger, both of Lewistown, Mont., April 27.

Gayle G. Arnold to Miss Elizabeth Key Boyle, both of Baltimore, Nov. 17, 1945.

Correspondence

THE CASE HISTORIES OF DOCTORS' ILLNESSES

To the Editor:—I intend to publish in book form a collection of subjective case histories written by physicians, if a sufficient number of suitable contributions can be obtained.

The response of patients to disease is essentially second hand knowledge, since it is by necessity based on information provided by patients. Since the development of ever wider and more refined methods for the objective evaluation of morbid conditions, the information that only the patient can give has more and more been relegated to the background. This tendency is enhanced by the much greater variety of individual symptoms than that of objective signs. Apparently uncontrolled variables (namely, the patients' response) are obviously less valuable in diagnosis and prognosis than are objective, recordable and preferably measurable signs and laboratory findings. Within limitations this tendency is scientifically sound and fertile. However, it needs to be complemented by a fuller knowledge of patients' subjective experience of disease. This refers to a much broader field than what is customarily called symptoms. Parenthetically it may be noted that the understanding, analysis and treatment of symptoms per se tend to be neglected in modern scientific medicine. Such neglect deprives the physician of most valuable diagnostic hints and the patient of relief that he may justifiedly expect. The physician who has had no intimate subjective experience with disease is apt to underrate greatly the patient's overwhelming interest in symptoms, falsely assuming that the patient always shares with him his dominating interest in diagnosis.

The full significance of the argument will be understood only if the term "symptoms" is used to mean the total subjective experience of the patient caused by disease. To the commonly acknowledged symptoms, such as pain, fatigue and nausea must be added such subjective experiences as are related to the mental, emotional, social and economic aspects. Any subjective experience proceeds not in a theoretical vacuum of the "normal" or "average" person but within the canvass of an established personality with all its modalities of intellect, emotions, faith, codes of behavior and social and economic realities. The argument may then well be encompassed in two main questions:

1. How has my personality (in the fullest sense of the word) modified the disease?

2. How has the disease modified my personality?

A fertile approach to this problem is to induce physicians to analyze and describe their own experience with diseases they have or have had. The combination of objective medical knowledge with the subjective experience should be particularly fruitful of original contributions in this field. While many subjective case histories could be and have been culled from autobiographies and from case reports, the present purpose has been advanced by only a small percentage of them, mainly because most of them were not written with the specific aim in mind.

I contemplate, therefore, publishing a collection of subjective clinical descriptions, written by physicians who have, or have had, certain diseases. In such a collection, emphasis should be placed on chronic or recurrent diseases, because they are likely to show, more than acute ones, modifications caused by the patients' individuality and more of such significant marks as disease may leave on the individual in his mental, emotional, physical, social and professional life.

Each contributor should be limited by no other concern than the general aim of the collection. It is therefore expected that objective clinical details be limited to that minimum which is germane to the story. Full emphasis should be given to subjective symptoms, especially to those that the usual textbooks consider unessential or fail to mention. Considerable details are expected in the matter of psychologic attitude to the disease as such, to pain, to the prognosis—right or wrong—to the limitations imposed by the disease or its consequences, to accomplished or attempted readjustments, and to peculiarities of the premorbid personality if it is essential to the total picture.

I am aware of the inherent difficulties and pitfalls. In many discussions the main and first objection raised was the impossibility of getting "unbiased accounts." This is simply met by the answer that unbiased accounts are neither expected nor desired, since it is precisely the individual experience that should be told. There will presumably be the contributor with exhibitionistic tendency, and the stoic on the other extreme. Proper editorial selection, it is hoped, will provide balance and the desired variety.

Each contributor will have the choice whether or not he wishes to remain anonymous; and, if anonymity is desired, it will be strictly maintained.

Physicians who may be interested in contributing reports of their illnesses are invited to write to

MAX PINNER, M.D., Editor,
American Review of Tuberculosis,
463 Vermont Avenue,
Berkeley 7, Calif.

QUININE AS PROVOCATIVE TEST IN MALARIA

To the Editor:—The remarks by Commander Fred A. Butler in the January 5 issue of THE JOURNAL deserve a little additional comment. He states that "the use of quinine as a provocative measure has not, to my knowledge, ever been reported before and requires confirmation." My own experience at a Southwest Pacific naval hospital revealed several cases in which the thick blood smear showed malarial parasites for the first time after the administration of 1 Gm. of quinine. That this experience was not unique is indicated by the statement on page 90 of Stitt's Diagnosis, Prevention and Treatment of Tropical Diseases (ed. 6): "Provocative measures to produce a relapse with a reinvasion of the blood by malarial parasites are occasionally employed for diagnostic purposes. Among these may be mentioned fatigue, refrigeration, exposure to sunlight, administration of small doses of quinine for ten to fourteen days . . ."

BERNARD M. JACOBSON M.D., Boston.

"PHYSIATRIST" FOR PHYSICIAN SPECIALIZING IN PHYSICAL MEDICINE

To the Editor:—An editorial comment in THE JOURNAL, May 4, suggests the term "physiatrist" for physicians who specialize in physical medicine. Many lay folk now have difficulty determining the spelling and significance of the words psychiatry, psychiatrist and psychologist. "Physiatrist" will further confuse. Psychiatrists will be answering calls from patients seeking physiatrists. Physiatrists will be embarrassed by unwelcome maniacal and paranoid guests. "Physiatrician," the second of three terms suggested, is discriminated better. That he is a physician rather than a lay healer is denoted by the last syllable of this term.

Please publish my protest to the term "Physiatrist."

RUSSELL G. MACROBERT,
Neuropsychiatrist,
Captain, MC (S), U.S.N.R.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Prepayment Medical and Surgical Plans: Limitations; Good Faith of Physician Member.—The plaintiff sued King County Medical Service Corporation to recover for the surgical expense of having a "stomach ulcer" removed by a physician member of the defendant organization. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Washington.

The King County Medical Service Corporation, a charitable organization founded some years ago by a large number of physicians and surgeons in Seattle, Washington, entered into a contract with the Seattle-Tacoma Shipbuilding Corporation, plaintiff's employer, to furnish certain surgical and medical services to its employees, among which were the following:

Services. (a) All surgical services reasonably required for any operation and/or for any accidental bodily injury to the patient for a period not to exceed twenty-six (26) weeks.

(b) All medical services reasonably required for the treatment of any disease and/or any sickness and/or any accidental bodily injury to the patient for a period of not to exceed Twenty-six (26) weeks.

The contract also provided:

8. The medical director of the company, who is hereinafter referred to as the "medical director," or any physician whom he may designate, shall have the exclusive and absolute right to determine whether any patient is entitled to treatment, and if so, to what treatment, and any such determination made in good faith shall be deemed and held to be conclusive and binding upon the company, the patient, his heirs, executors, administrators and dependents and upon the employer if the employer be interested, and upon those offering said services. . . .

Terms, Limitations and Exclusions. The physician shall not be required to treat: . . .

3. Any preexisting sickness, injury or physical disability whether patent or latent and their complications and sequelae from which the patient may be suffering, or which may originate or exist prior to the commencement of his relationship with the company and the medical director or a physician whom he may designate shall in line with the authority conferred upon him in paragraph 8 of the agreement, have the exclusive and absolute right to determine the question whether or not any such condition originated or existed prior to the commencement of the relationship between the patient and the company, and further, that any such determination made in good faith shall be deemed and held to be conclusive and binding upon the patient, his heirs, executors, administrators and dependents and upon his employer, if any there be interested, and upon the company, and upon the physician; . . .

The plaintiff, as an employee of the Seattle-Tacoma Shipbuilding Corporation, became a contributor in 1942 and thus became entitled to the privileges of the contract existing between his employer and the defendant, King County Medical Service Corporation. At 11 p. m. on Aug. 23, 1942 the plaintiff became violently ill. Dr. Hagyard, a member of the defendant organization, was called and determined that an operation should be performed at once. Plaintiff was rushed to the hospital, where Dr. Hagyard operated and found a perforation of the bowel, where the perforation being right in the center of a hard mass which the doctor discovered to be an ulcer. Because the immediate condition of the patient did not permit the removal of the ulcer at that time, Dr. Hagyard closed the perforation by covering it with layers of fat so that food and fecal matter would not escape into the abdominal cavity. Both before and after the plaintiff had left the hospital he was informed that he still had a "stomach ulcer." The physician did not recommend the surgical removal of this ulcer, however, but suggested that medical treatment be tried first and accordingly prescribed a specific diet for the plaintiff to follow. The medical treatment was unsuccessful, however, and in September of 1943 Dr. Hagyard performed another operation on the plaintiff and at that time removed a "stomach ulcer." The defendant paid all the expenses of the first operation but refused to pay for the second operation.

The question presented was whether the defendant corporation, under its contract, was bound to pay the expenses of the second operation. The plaintiff argued that Dr. Hagyard and the defendant purposely "attempted to avoid any liability for considerable expense by putting the plaintiff off, week after week, and not performing the operation which was necessary to effect a cure, putting him off until twenty-six weeks had expired." We have made a careful study of the statement of facts, said the Supreme Court, but cannot find any evidence to support the plaintiff's contention. At one time during the trial the plaintiff was asked how long it was after the operation before he was ready to have the second operation performed. The trial court sustained an objection made by the defendant on the ground that the question could be answered only by medical men. We are compelled to hold, the court concluded, that there was neither evidence, nor inference from the evidence, to substantiate the plaintiff's contention. The defendant argued that under its contract it was not compelled to pay for treatment of a disease for a period longer than twenty-six weeks and that the ulcer was a preexisting sickness for the treatment of which it was not liable. This contention, the court said, is founded on provisions of paragraph three of the rider to the contract. Neither the jury nor the members of this court are able to determine the proper treatment of the plaintiff's ulcer. The doctor attempted for over a year to cure the plaintiff but finally had to perform the operation. We cannot determine in the absence of medical evidence, and there was none, that the operation should have been performed within the period mentioned in the contract. We must decide this case in favor of the defendant for the reason that the ulcer from which the plaintiff suffered was a preexisting disease for the treatment of which the defendant was not liable under its contract. Medical testimony showed that many people have ulcers of the stomach and never have any trouble or pain to indicate that they have the condition, which at a later date becomes acute. We therefore conclude that there was no evidence which justified the court in submitting the case to the jury but that, on the other hand, the evidence showed that the defendant had complied with its agreement contained in the contract. Accordingly the judgment in favor of the plaintiff was reversed, with instructions to dismiss the action.—*Schultz v. King County Medical Service Corporation, 165 P. (2d) 857 (Wash., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, June 1, page 483.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF DERMATOLOGY & SYPHILOGY: *Written.* Various centers, Oct. 7. Final date for filing application is Aug. 15. *Oral.* Cleveland, Dec. 5-7. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 21. Final date for filing application is July 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II. Oral.* Chicago, January. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 1136 W. Sixth St., Los Angeles 14.

AMERICAN BOARD OF PEDIATRICS: *Oral.* San Francisco, July 1-3. Sec., Dr. Lee F. Hill, 3309 Forest Ave., Des Moines, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: New York, December. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

NATIONAL CONFERENCE ON RURAL HEALTH

First Annual Meeting, Held in Chicago, March 30, 1946

Purpose of Conference

DR. F. S. CROCKETT, Chicago: The purpose of this conference is to seek improvement in rural medical service. Rural medical service is more than having a doctor in the community. Good housing, warm clothing, a suitable diet, together with adequate health education are important factors in maintenance of rural health. The problem is economic and social as well as professional. Given all of these, yet the well trained physician cannot operate in a professional vacuum. The good physician never ceases to improve his educational and professional skills. He must have available diagnostic resources, such as the laboratory, x-ray and an opportunity for consultation with his fellows and with those who have acquired special training, if he is to give the sort of service satisfying to his professional soul. Attracting and retaining well equipped doctors, such as returning veterans and recent graduates, to areas some distance from medical centers will be helped by what we doctors and interested farm groups do here and carry back to our home states.

The problem cannot be solved on a national level. It must be worked out in the community where the need resides. Every one in the community must join if any effort is to succeed. One of the first things to be done is to find out where medical service is lacking. Some states have made surveys of rural and urban medical facilities. In some states councils have been created joining all elements within the state in this health effort. Committees of state medical societies should join actively with their comparable farm group committees in identifying themselves with existing state councils or inspiring the creation of such organizations where not now existing. Since legislation to create more hospitals and other facilities may be passed by Congress, rural areas will benefit. This feature should be of especial interest to us.

Sound judgment should direct the location of hospitals and other facilities in relation to population served—distances that the sick can be transported, the physical features of roads and terrain and the professional personnel available for good results.

Providing plans for the payment of good medical and hospital care is another part of our problem. It is hoped that in all our states the medical profession will sponsor plans to aid those who find it difficult to pay for catastrophic illness. In some states such plans already exist but serve principally industrial groups. Our state committees should seek to extend these benefits to country people. One of the difficulties will be in application of such plans to farmers of the marginal type unable to pay the usual total premium for medical care and hospitalization insurance. Whether the general plan of the Farm Security Administration could be adapted to this segment of our country population, where the family pays something which in turn is supplemented by general taxation, remains to be seen. I believe it has possibilities as well as difficulties. At least it is something for our state committees to consider.

It is our duty, the duty of those we represent, to exercise the greatest vigilance wherever we believe our common interests are threatened through federal domination. There can be too high a price paid for help. Medical care of our farm people is a nationwide problem which can best be solved on a state and county basis. This is your opportunity to do a constructive job in your own home states.

Address of Welcome

DR. OLIN WEST, Chicago: I extend to you in behalf of the Committee on Rural Medical Care of the American Medical Association and the American Medical Association and its constituent units a most cordial and sincere welcome. We are delighted to have in this audience representatives of national farm organizations, individual farmers, representatives of state medical societies and some physicians not representing any of those organizations. The American Medical Association and its constituent units are sincerely interested in the efforts being made for the solution of the problems involved in the farm care. Some states have already organized committees representing organized agriculture. These problems are not going to be easy of solution. Some of the problems involved are factors that are actually involved in biologic law, the very law of nature, and in economic law. These laws are well nigh immutable. Many of those factors or changes effected in those laws are going to be effected through process of evolution and not through revolutionary procedures.

The Farmers' Medical Care Problem

MR. RANSOM E. ALDRICH, Jackson, Miss.: The chief problem of medical care in rural America is cost. It is economic. It is social. I live in a county that doesn't have an active practicing physician. The nearest physician is 22 miles away. The flat charge is a dollar a mile. The low income group in American agriculture simply doesn't get medical service from that kind of charge. They go without it. I don't know that the doctor can render service any cheaper than that. I know we must work out some type of prepayment plan. We must work out a program of health centers, diagnostic clinics, ample service and large hospitals in the areas where they can be supported. Some of our people are too anxious to build hospitals in areas that can't support them. Before a hospital is established there must be a survey made and adequate profession for maintenance in that community. It would be a tragedy to have ghost hospitals all over America. We can provide hospital services and adequate beds, and then I am urging your group to see that rural America has just as good a supply of doctors as any other group in America and that they are just as well trained. Frankly, people think you have the standards too high for doctors. Your costs are exorbitant. I don't entirely subscribe to that. I do say we have a shortage and I think it is up to you and the agriculture group to stimulate interest in producing enough doctors to serve rural America. From our committee of the American Farm Bureau Federation I pledge you our support in trying to work out a constructive long range adequate program.

DISCUSSION

DR. L. W. LARSON, Bismarck, N. D.: Rural health has always been a problem. Education of the farmer through the public schools and universities, press and radio, and improvements in the means of transportation from the farm to the town and from the town to the city have certainly decreased the seriousness of the problem. However, two phases of the problem remain unsolved; they are (1) availability and (2) cost of rural medical care. Availability of rural medical care resolves itself into the problem of either bringing the doctor to the people or making it possible for the people to get to the doctor. The fees for the actual services rendered by the rural practitioner are not exorbitant; they are usually much lower than the fees charged for comparable services in urban areas. Improvements in transportation, particularly in the development of good highways which are passable throughout the year, will accelerate the growing tendency of rural people to bring the patient to the doctor. This will reduce the cost of medical care; it will conserve the time of the physician, who too often spends the majority of his working hours in traveling to and from his patient. The only solution of the problem of cost of rural medical care is to raise the level of the farmer's income or reduce the cost of the physician's services or spread the cost of medical care throughout a prepayment medical insurance plan.

A Public Health Program for Rural Areas

Dr. Fred D. Mott, Washington, D. C.: The disadvantage in rural health is chiefly with respect to those conditions which can be influenced directly by modern health educational and preventive services. Thus the death rates of rural infants, preschool children and youths 15 years of age and over were higher in 1940 than those of residents of large cities. While cities of 100,000 or more had an infant mortality rate of 34.3 in 1942, the rate was 43.3 in rural places and 44.6 in semirural towns. The rural maternity mortality rate in 1941 was almost one third higher than the big city rate. As of 1940 we find that the infectious and more or less preventable diseases take larger rural tolls. If we consider the most rural state and the most urban state in each of the nine census regions we find that, as a group, the most rural states had higher case rates in 1942 for chickenpox, whooping cough, mumps, scarlet fever, diphtheria, septic sore throat, malaria, bacillary dysentery, typhoid and paratyphoid, tularemia and smallpox. Trends show that tuberculosis and syphilis may soon become primarily rural. Despite gratifying progress since passage of the Social Security Act in 1935 there were still 1,242 counties in 1942, 40 per cent of all the counties in the nation, without full time county or district health departments. Excluding the people covered by municipal health agencies in these counties, there still remained 33 million people, one fourth of our national population, lacking the protection of a full time health department. Moreover, this consideration of the counties lacking any official health coverage gives only part of the picture. Few of the rural health departments that we do have are housed, staffed or financed in a manner adequate to do their job.

Competent authorities agree that $2 per capita is required to provide satisfactory public health services. Yet in rural counties the per capita expenditure for public health work is hardly 50 cents annually. Total expenditures by local health agencies in our most rural states in 1942 were at only about half the rate of those in the most urban states. A study of Farm Security borrower families in 1940 showed that only 37 per cent of children up to 8 years of age had been vaccinated against smallpox either at public health clinics or by private practitioners. In contrast, 89 per cent of children in this age group had been vaccinated in twenty-eight large cities studied in the National Health Survey. The same story holds true for tuberculosis control, venereal disease control, health education or almost any other accepted function of a local health department.

The American Public Health Association has proposed a sound plan that would group counties with small populations into districts of at least 50,000 people. On this basis the 3,070 counties in the nation could be grouped into fewer than 1,200 districts, a far more sensible organization of public health than today's 18,000 independent, uncoordinated health jurisdictions. If rural communities would put up about one dollar per person per year themselves, to match about another dollar coming from outside sources, far more could be done to improve rural health than anything we have accomplished up to this time.

Most states now have permissive legislation regarding the establishment of local health departments. Under these laws a county or a community may appropriate funds for public health. Surely we have reached the stage where we should insist on mandatory state legislation under which appropriate public health units would be established throughout the state and their financial support would be required. We already have laws of this kind governing the establishment of public schools. Similar legislation would be the surest way—and an entirely practical and intelligent way—to make public health services available to every rural citizen within a reasonable period of time.

The major public health problems today are the degenerative diseases of advancing years—the various diseases of the heart, the blood vessels and the kidneys, diabetes, cancer and arthritis.

I want to touch on the fundamental question of rural purchasing power and the medical purchasing power of farm families. In 1941 half of all farm operators had annual net cash incomes of less than $760 per family, including income from all nonagricultural sources. So far as rural medical purchasing power is concerned, as contrasted to general purchasing power, it is revealed most readily in the annual expenditures per person for medical care by median income families. Studies show that in 1941 median income urban families spent $26.76 per person for medical care, while median income farm families spent $14.37 per person, or hardly more than half the urban expenditure.

It is not surprising that there is so close a relationship between purchasing power and the distribution of physicians, dentists and nurses and of general and other types of hospital beds. Modern medical services of high quality cannot be provided without adequate resources in personnel and facilities.

Before we set out to solve the whole problem of payment for medical services on a voluntary basis we must not only face these cold factual income and expenditure figures but we must remind ourselves that fewer than 5 per cent of the whole population now receives general medical services on a prepayment basis. Less than 3 per cent of all farm people are covered even for Blue Cross hospitalization and, taking whole states, the states which are over 70 per cent rural had just 4.2 per cent of their population in Blue Cross plans last July 1 as against 18.7 per cent in the states over 70 per cent urban. We must note too that in voluntary plans offering general medical care—aside from those sponsored by the Department of Agriculture—the greatest urban-rural disparity is found with respect to medical care insurance sponsored by medical societies. As of 1945, medical society plans covered 3 per cent of the population of the twenty states that are over 50 per cent urban, but in the twenty-eight predominantly rural states they covered only one half of 1 per cent of the population.

Before we look at the voluntary prepayment approach with optimism, we must ask ourselves frankly how many farm families can afford to join comprehensive medical service plans. There is general agreement that a plan offering physicians' and specialist care, hospitalization, dental services and prescribed drugs would cost at least $100 for a family of average size. Studies show that farmers had to have net cash incomes averaging well above $2,000 in 1941 before they made average expenditures of $100 or more for medical care. The fact is that not more than 20 per cent of all farm operators had such incomes in 1941, counting income from all sources. The great majority of farm families throughout the nation simply cannot afford to purchase adequate health protection on a voluntary prepayment basis.

We have a choice to make. Each road we may choose has its toll. One road winds for a time through the field of voluntary health insurance. Although this road is an improvement over the past, its toll is one we should calculate honestly. It has its cost—in almost certain failure to bring anything approaching maximum health opportunity to the majority of our 57 million rural citizens. There is also a hidden cost behind these phrases that we must face. There are people living out over this broad land—people on farms and in villages—people whose babies get sick, whose children break arms and legs, who get every physical and mental disorder known to American medicine. These people want competent physicians nearby; they want a modern hospital within reach; they want certain specialists closer than the metropolis 200 miles away. And they want a simple and sure method of paying their share for the support of these essential resources. I, for one, am unwilling to say to representatives of the farm population that these objectives are utopian. On the contrary, they are realistic, they make sense and they are attainable. But it will take more than the road winding through the tempting pastures of voluntary health insurance to reverse the inexorable trends dictated by economic laws. We may choose this first road—for five years, for eight years or for ten years—but if we do, let us count the cost along with any gain.

There is another road we can choose today, the road charted by President Truman. It is broad and it is direct—the way of compulsory health insurance. In one sweep it cuts through the economic barrier, bridges the uncertainties of individual medical costs and stretches out into the future a solid economic foundation for all the challenging measures we can devise to build good health. This road also has its toll, but of a different sort. If we choose this road, the cost we shall pay will be found largely in the taxing of our minds and our imaginations to build, and build promptly, on the solid and unaccustomed economic base the system will provide.

Think for a moment what it would mean if we had this central core of national health legislation. Medical purchasing power would be spread evenly the country over. Hospital planning and construction proposals would suddenly have real meaning for rural people, for hospitals could be placed where needed once their maintenance was assured. The urban-rural double standard would be wiped out—rural people would be assured the number of hospital beds they need and not just those they can support today. Something like ten dollars per person would suddenly become available to pay physicians' bills each year—$10,000 for every 1,000 rural people, $20,000 for every 2,000 people. Think of the opportunities this would create in hundreds of underserved rural counties. Picture the flow of veteran physicians and new graduates into rural districts under these changed economic circumstances and with the assurance of hospital or health center facilities.

Farm leaders have a responsibility to see that farmers know all the facts when they make their choice. They should know all the strong and weak points about voluntary prepayment plans. They should know the facts too about the President's program. They should know that the day to day administration of the President's program will be local. They should know that in this program local people and their doctors will serve as consultants in their localities. They should know that—as always—they would choose their own doctors and their hospitals. And they should know the cost of either course in terms of money. Under the President's proposal for a national health program the farm family would pay from 3 to 4 per cent of net income for personal health services. The average percentage of net cash income spent by farm families in 1941—for inadequate services—was actually 8.7 and the percentage spent by low income farmers was higher yet. It seems unlikely that farmers will miss the point or will fail to recognize the clear advantage to farm people and to entire rural states of pooling the resources of the whole nation to tackle this problem.

DISCUSSION

DR. VICTOR JOHNSON, Chicago: The small enrolment in voluntary plans for hospitalization and medical care cited by Dr. Mott is deceptive, since the absolute figures do not include the important factor of expansion and growth. For example, a few years ago only 700,000 persons were enrolled in hospital prepayment plans. In a few years this figure has been multiplied more than twenty times, so that today there are twenty million people enrolled in one system alone, the Blue Cross, which is the largest of the hospitalization insurance plans. Again, in the state of Michigan the medical care plan sponsored by the state medical society has grown to nearly a million subscribers, or one in five to six of the population, in a relatively few years. We may look forward to growth of medical care insurance coverage in other states on the basis of the experiments in Michigan, so that in a few years there may be many more people insured for medical care than are now enrolled in the Blue Cross hospitalization plans.

To be successful and to meet the needs of the country it is essential that prepayment medical care insurance be expanded greatly and provide a wider coverage. First, this must be done for those who can pay their own premiums. Such expansion should include the farm as well as the urban population of the country. Negotiations are now under way between the California Physicians' Service and the Grange in California for group coverage of farm people. Such arrangements should be consummated elsewhere as well, so that farmers and city dwellers will enjoy the benefits of medical care insurance. Secondly there must be efforts and experiments directed toward the inclusion of some of the indigent and the medically indigent in these programs. How this can best be done presents a serious problem. Many of the indigent have chronic illnesses, and in many instances the illness may be the cause of the indigence. Patients with such chronic illnesses as tuberculosis or mental and emotional derangements are soon likely to find their funds exhausted in the course of the illness. Perhaps such groups must continue to be provided medical care as special problems outside the scope of prepayment insurance plans. Certainly the inclusion of considerable numbers in these categories is likely to threaten the financial structure of any prepayment medical care plan. On the other hand there is probably a large group of indigent or medically indigent people whose inclusion into medical care plans would not disturb the financial soundness of the programs or impose unduly high premiums on every one.

Perhaps information concerning the best way to include such groups will be forthcoming from another major experiment in improved medical care being conducted in the state of Michigan under the auspices of the Michigan State Medical Society. This experiment deals not with the indigent but with another group for whose medical care the federal government has assumed responsibility. This group is that of the veterans with service connected disabilities. The Veterans Administration has entered into contracts with Michigan Medical Service to provide care for this group, employing the fee schedule of that prepayment insurance plan. The physician collects his fees from Michigan Medical Service, which in turn bills the Veterans Administration. This plan for veterans is also being organized in other states and may well provide a formula on the basis of experimentation for a considerable increase in the coverage of the lower income groups of this country by prepayment medical care plans.

In our efforts to solve the problem of improved medical care it would appear wiser to proceed along these experimental evolutionary lines than to make sweeping revolutionary changes. Experiments should be conducted even with compulsory medical care insurance in circumscribed areas or communities. One such experiment is already under way in the state of Rhode Island, where compulsory insurance is employed in industry, with contributions by the state, by industry and by the insured employees. Much has already been learned from this worth while experiment. After the first year of operation of this plan certain significant conclusions were reached by all participants, including the physicians. It was found that red tape was excessive, interfering with the quality of medical care. It was also found that the costs of administration were more than was anticipated. Finally it was found that there was need for decentralization of the program. The latter finding was particularly significant in the light of proposals for nationwide compulsory insurance, since Rhode Island is one of our smallest states, with a relatively small population of both physicians and patients. Such illuminating experiences promise to provide much valuable information for the extension of our experimentation into further methods for improving medical care in this country.

Throughout all such efforts it is imperative that we keep ever before us the necessity for maintaining a high quality of medical care. It would serve no useful purpose but rather produce much harm if extension of medical care to all geographic areas and to all the citizens of the country was to be accompanied by a deterioration in the high quality of medical care now being provided.

Health Program for Small Communities

MR. HOWARD STRONG, Washington, D. C.: Rural health service may be broken down into three categories: (1) medical service by physicians in private practice, (2) service through hospitals, medical centers and clinics, and (3) public health service through official agencies.

The distribution of service by private physicians varies widely. It is generally assumed that the proper ratio is about one physician for each 1,500 people. Cities and metropolitan areas have the largest number of physicians per thousand of population, while the rural areas have the smallest proportion.

The most immediate need is the supply of physicians for rural areas, and there the situation at present is not too encouraging. Sixty thousand doctors were called to the service. These men are now returning. The majority are going back to their old practice. But a sampling made by the Procurement and Assignment Service shows that only 23 per cent of this former practice is in towns of less than 5,000 and in the rural areas. Between 15,000 and 20,000 of the returning physicians are young men who had established no practice before going into the service, and these men want to go to cities ranging between 25,000 and 250,000. There is a very definite reason for this preference

for the larger city. The younger men who have graduated more recently from the medical schools have been trained in the use of all the hospital, technical and clinical facilities of the larger city. With the development of diagnostic and clinical technics and equipment, and of increasing specialization, practice without adequate clinical and hospital facilities is becoming increasingly difficult and unsatisfactory. A physician hesitates to go into smaller towns and rural areas which do not offer these facilities. He will go to the larger city where they may be found. This brings us to the possibility of increasing these facilities in the rural areas, and here we find some encouragement.

The National Commission on Hospital Care inaugurated by the American Hospital Association is making, in cooperation with state health departments, a study of hospital facilities and needs throughout the nation as a basis for a national hospital program. This is the most complete study that has ever been made and out of it will come, it is hoped, a national program which will have the cooperation of all health and hospital agencies, public and private, and of the medical profession, throughout the United States.

A small community or a sparsely settled rural area cannot afford to employ full time health officials and provide adequate service. A recent nationwide study of health department facilities indicates present local facilities and needs and proposes the development of a system of health administration under which several rural counties may combine in the employment of a health staff and the maintenance of a central office. This proposal contemplates a total of 1,197 health units for the country. It would make adequate public health facilities available to every section of the country—cities, towns and rural areas. A town of 15,000 or 20,000 with county, multicounty, state and perhaps federal assistance usually can build and support a 15 to 40 bed hospital with necessary medical and nursing care, provision for the practice of internal medicine, obstetrics, minor surgery, dentistry and some other specialties and with simple laboratory equipment. Such a small institution can serve a majority of the hospital needs of a small community with its rural area, if it has the opportunity to refer complicated cases to the larger hospitals. And great promise lies in the recent activity toward the provision of nationwide medical care on a prepayment basis. Congressional bills propose a universal, tax supported medical service. The American Medical Association proposes a nationwide voluntary prepayment plan based on the action of local medical societies. These proposals represent two widely divergent schools of thought, and the proponents of each are vigorous and sometimes acrimonious in their support. But all this does not mean that health service is going to be presented on a silver platter to every community and to every rural area. The larger political units, federal and state, are not going to do it all. County and town communities must participate with citizen enthusiasm and with tax and voluntary funds. And this is where you, representing most of the farmers and rural areas of the country, and we, representing small as well as big businessmen and their organizations, come in. You have the responsibility for convincing the rural population that health is a sound dollar investment as well as a human asset. We, for eighteen months, have been seeking to stimulate interest in the smaller communities of the country to provide more adequate health service. The response has been beyond our expectations. Smaller communities all over the country are seeking ways and means of providing more adequate health and hospital service. And definite action to this end is increasing. We expect to intensify this effort in cooperation with the American Medical Association and to help in bringing to these areas the importance of local action if adequate health provision is to be made.

Health Education for American Farmers

LELAND B. TATE, PH.D., Chicago: The Farm Foundation which I represent is a private, philanthropic organization whose objective is the stimulation of research and education for the improvement of rural living conditions. Our policy is to work with various agencies, organizations and leaders interested in the general welfare of rural people and to stimulate activity where needs are great and progress is slow. Hence some of our chief concerns are better medical care and health services for farm folks, and health education of a broad nature which brings (1) knowledge and understanding of what is desirable for maximum health and (2) insight into ways and means of getting and paying for adequate health and medical services.

In our rural health work we have stressed particularly ways and means of getting more personnel, facilities and services. We have used both regional and organizational approaches. From a regional point of view we have concentrated our efforts mainly in the Northern Great Plains from Nebraska to North Dakota and in the Southern states from Virginia to Texas. Various measuring devices show these as predominantly rural regions in need of many more and more widely distributed doctors, dentists, nurses, hospitals and health centers. On a somewhat informal basis we have worked with farm organizations, research and extension divisions of agricultural colleges, the National Extension Service, public health people, medical colleges, state and regional health planning committees and various medical, health and lay leaders, both private and public.

It seems to us that any one who plans an educational program for American farmers about health services and medical care should know at least five fundamental things: (1) the meaning and significance of health and education, separately and in combination, (2) the characteristic facts about farm people as a segment of the total population, (3) the forces that prompt farmers to think and act as they do, (4) suitable subject matter content and (5) appropriate appeals and teaching technics.

To us health education is considerably more than giving instruction and having people learn about health rules, routines, safety, sanitation and other traditional topics. A comprehensive educational program about health matters might well attempt to (1) create awareness, (2) overcome inertia and indifference, (3) soft-pedal fear complexes, (4) explain the basic factors affecting health in a positive way and in a negative way, (5) describe existing health situations, (6) make known available facilities and services—how obtained, when, where, by whom, under what conditions, and (7) clarify alternative ways and means of getting more facilities and services: their possibilities and limitations, their advantages and disadvantages.

An educational program for farmers about health matters should take into consideration the forces that prompt farmers to think and act as they do. This covers much of what commonly is called farm psychology. It is apparent that many factors influence the prevailing ideas which farmers and others have about health services and medical care. Among these are traditions or handed down beliefs, customs or handed down procedures, attitudes or feeling tones toward certain things and persons, experiences with biologic objects such as growing plants and animals, self employment and what it implies, and economic uncertainties due to the great dependence on weather in farming operations. These factors need particular emphasis and consideration in developing plans for educational programs about health matters as far as farm people are concerned. Failure to recognize these factors may jeopardize maximum progress toward desired objectives.

The economic factor is a very important one to consider when appealing to farm people. For example, it can be stated positively that sound health means productivity for making money. Ill or half sick persons with impaired strength and will power mean costly waste in most rural communities. This situation is a barrier to economic efficiency even though no direct payments are made to doctors and hospitals. Labor represents more than half of the farmers' cost of production. If this labor is of low quality because of sickness or impaired effectiveness, every day lost is reflected in lower earnings. Hence good health becomes a prerequisite for full time employment on efficient farmsteads. Emphasis too may well be placed on present high costs for medical and dental services to rural people out of proportion to their paying ability. Together these two economic considerations—one direct and the other indirect—make a strong appeal to most persons.

Summary Discussion

MRS. CHARLES W. SEWELL, Chicago: Today, in a realization of the great needs in rural America for more adequate health programs, more doctors, nurses, hospitals, equipment, better roads, economic improvement and more education to meet these problems intelligently, we come as doctors to a clinic. Here

we have counseled together, exchanged opinions regarding new or controversial treatments and now should determine our course and throw the high powered x-ray of knowledge on hidden causes of unsuspected malady.

Perhaps the first of these would be the scattered population—the disproportion of organized farm families to those found in unorganized groups. The low income of such large numbers of rural population is another tremendous handicap. A third is the irregular income, since great numbers of farm people do not have a source of revenue except from the sale of products three or four times in any given year.

Farm people are proud and conservative and as far as possible are anxious to pay their own way. In twenty-six states, members of our organization who are residents of a territory not too far removed from some of the larger metropolitan centers have been able to work out satisfactory arrangements for hospital insurance and in some instances complete medical care.

The principle of insurance through mutual benefit associations, for hospital and medical care, appears to us to offer a plausible solution. As rapidly as possible, workable plans already in existence should be extended until they reach the remotest parts of rural America. However, we are not blind to the frailties of humanity, and rural people are not greatly different from those of any other group. A program of education for this type of insurance must be carried forward until health and hospital insurance provisions become just as well known and as genuinely accepted as fire, automobile and life insurance.

The American Farm Bureau Federation has favored the objectives of legislation providing that the federal government should reasonably extend its public health program with respect to maternal and child health, rural hospitals, public health services and medical care for those unable to provide such care for themselves. Such legislation should safeguard the rights of the states to develop their own programs to meet their own local needs. The federal government is not justified in assuming the burden of supporting the health and medical facilities that the states can and should bear, but only to the extent necessary to bring about equalization of health and medical facilities among the several states.

The proposals of the Hill-Burton bill, now before Congress, designed to establish commissions to study health needs and to set up hospitals in rural communities, is one of great interest to us. It is to be hoped that if such arrangements are completed the utmost care will be taken to place the hospitals in communities of greatest need, and not only the problem of building, but that of maintenance and location, receive careful consideration. Again it is imperative that there be an adequate number of trained personnel, doctors, nurses, technicians and laboratory assistants.

We are disturbed by proposals designed to provide compulsory federal hospital and health insurance. Our chief concern is to get more adequate medical care and hospitalization for our farm folk. We are wondering if the personnel set up to administer such a health program would know no more about the subject than those placed in positions of authority in other governmental bureaus dealing with agriculture and who recommended "taking the shoes off a horse at night to save critical steel as a war measure." We wonder if it would require as many trips to the county seat to secure stamps for medical care as it has done to get gasoline, tires, farm machinery and rubber boots in order to carry on agricultural production. We wonder if the stork could delay his visit while the necessary red tape was cut or if we might receive a directive such as the sheep men were presented, advising them in the face of shortage of herders for the critical lambing season to "postpone the lambing until more favorable weather." We have repeatedly expressed our opposition to compulsory insurance plan by resolution. In answer to the statements that we are not moving rapidly enough with such a program we point to the growth of Blue Cross. Like a Chinese scholar who taught the famous Chinese marching song to groups of soldiers ten at a time and then in twenty minutes had an army of ten thousand singing "Many hearts with one mind, Brace the enemy's gunfire—March On—March On," a song heard round the world, we believe it can be done through voluntary effort on a broad educational program.

Our organization is particularly interested in the development of plans that will permit of bringing the cost of medical care more in line with the prices which are obtained by farmers as they exchange their products for the labor and services of health agencies. It is one thing to pay $150 for a surgical operation when wheat is $1 per bushel and an entirely different one to pay the same cost with wheat at 50 cents per bushel.

The prevailing cost of a bedside call in most rural communities is still based on the practices established during the horse and buggy days, necessitating longer absence from the doctor's other patients or office than is now necessary.

DR. HARRISON H. SHOULDERS, Nashville, Tenn.: I should like for you to think of medicine as being entirely preventive. When a department enforces sanitation measures it's to prevent the transmission of disease. There has been entirely too much segmentation of this whole problem of medicine. As science has progressed it made apparent the fact that there are preventive measures that require the use of the police powers of the state. There are many other preventive measures which are placed in the hand of the individual physician and individual citizen. An individual cannot enforce a quarantine. The executive department can. A state department can. I cannot enforce a sanitary and milk order. An executive force can. For that reason and for the time for that reason only, public health departments were created. And they did a fine job when they confined themselves with these particular powers. We are for public health, but the question comes down sometimes to what is meant by it. Diseases have disappeared under public leadership, under public health departments and with the prudent use of the powers covered beyond them. Today such diseases as diphtheria and smallpox could be prevented by individual effort, I mean by inoculation to a large extent, in the hands of individual citizens and individual doctors. With that broad, simple division of activity then the question comes up Shall we pursue in this American way of life to use our individual efforts and our individual genius and our individual financial aid? It comes down to the economic situation. Let's consider the cost of such things in a rural county. These public measures serve their purposes largely when cities realized that they required sewerage, sanitation and similar benefits. The farm community is still an individual unit. Any public agency must perform most of the activities on an individual basis. In a city it is different. People become congregated and congested. Geography and location have a lot to do with the problem. In a county of 30,000 with a birth rate of 25, it costs $15 per child to inoculate against five preventable diseases. A suggestion made this morning would require a dollar per head, $60,000 a year, to carry out the public health measure of the country.

Application of Medical Knowledge

HON. J. PERCY PRIEST, Nashville, Tenn.: How to make rural life in the United States sufficiently attractive and sufficiently stable to permit the production and utilization of essential farm and related products within a pattern of intelligent conservation of rural resources—both human and natural—is not merely a question for emotional appeal to the humanitarian. It is one of cold, calculating, hard headed economic significance—yes, even political significance.

Every one is agreed that the health record of the United States is—on the whole and relatively speaking—good. There is agreement also however that it is not as good as it should be, not as good as it is possible for it to be. Indeed, for certain areas in the country and for certain groups of our people it is agreed that the record itself is definitely not good.

One of the issues that is repeatedly before the Congress is whether the benefits of proposed health legislation, whatever it may be, will eventually be realized by the people who need them most. It is impossible to conceive of health legislation that would apply with equal benefit to all parts of the country. As a result we are faced with the question as to whether we should legislate down to the least advanced areas or up to the most advanced. It is my opinion that the only way to progress is through the latter approach. It is only in this way that government can meet its responsibility of assuring the whole population, as far as possible, the full benefits of good health care.

Even though science has yet to give us the cure for many maladies, the full application of what is known would do much to prevent or minimize the effects of illness. The real problem, then, is to devise the instruments of organization through which all the benefits of present medical knowledge can be applied to the needs of all the people. Before we can even begin a full attack on that problem we must determine how we can best provide for all the people anything approaching adequate medical care. One vital question must be resolved—this is How can we pay for adequate medical care for the whole population? The President has suggested that we accomplish this by spreading the cost over the entire nation through expansion of our existing social insurance system. It is my belief that only through application of the insurance principle to the risks of illness can we make possible equal opportunities for health in every part of the country.

Students of medical care seem to be in accord in the opinion that prepayment by groups for medical service is more efficient and hence more satisfactory than postpayment by individuals. Here, again, there appears to be no area of serious disagreement. One finds controversy only on details of how the insurance principle can best be applied. One of the major issues today is whether group prepayment should be on a basis of local control and voluntary participation or on a basis of national control with universal participation.

Health services to a large portion of our rural population are alarmingly deficient. There are far too few physicians and other health personnel, far too few hospitals, public health services and sanitation facilities in rural communities to serve the 57,000,000 people who live in these areas. Since I have proposed remedies to the problems of hospital and mental care, let me take these two fields of need as examples of inequities that exist among rural and urban areas. Adequate numbers of psychiatric personnel and clinical services are exceedingly limited throughout the country. They are nonexistent in rural communities. While the hospital facilities problem is not as acute, the disparity between urban and rural areas in the hospital field is almost as great. Rural areas have about half as many hospital beds as do the metropolitan centers—less than half the number they need to serve their people adequately.

In the field of preventive services these disparities continue. Despite the progress that has been made under the impetus of the Social Security Act, there are still about fourteen hundred counties lacking full time health departments. Practically all of them are rural counties. There are gross deficiencies too in sanitation facilities. The reason is simple. People in rural communities and rural states do not have the purchasing power with which to avail themselves of the facilities and services that are essential to good health care. The year 1943 was unprecedented as a year of farm prosperity, yet the income from farming amounted to only 9 per cent of the national income, while farm people made up about 21 per cent of the population. According to the latest census of agriculture (1940) about two thirds of all farm families had gross incomes of less than $1,000, with one third under $400. States predominantly urban (70 per cent) had an average per capita income of $800, states predominantly rural (70 per cent) of about $300. It is basic to our economy that some solution be found to this grave imbalance, and I applaud the Farm Bureau Federation for its efforts to obtain greater equalization of rural and urban incomes. Until that time has arrived, justice demands that the urban states, which are, in a sense, draining off the wealth of their rural neighbors, help to extend into our rural communities those facilities and services which are necessary to good health care.

For the nation to meet its obligations in a field as broad, as complicated and as fundamental as health, it is of the greatest importance that the public agencies administering the program be maintained at the highest possible degree of competence.

Rural Medical Services in Alabama

DR. J. PAUL JONES, Camden, Ala.: People in rural areas want all the benefits of first class medical services or science that they have read about; they want more doctors, nurses and all facilities for good medical care. They want an easier and a more economical way of paying these bills, even if it means subsidizing of medical services by state or federal agencies. The day of rugged individualism in rural medicine is passing; the people are demanding better care. In its place is appearing the belief that good medical services can be obtained in areas of low economic income either through taxation or through subsidies. The public is slowly becoming convinced that improved medical care and more hospitals are a public responsibility in the same class as good roads and good schools.

While it is true that improvement in farm income and rural living conditions, including education and sanitation, would of course go a long way toward solving the rural medical services problem, there are certain objectives we could aim at right away: 1. Some way to ease the payment of medical services and hospital expenses, through prepayment insurance for those able to pay, and subsidizing of indigent medical services and hospital expenses by the community or state. 2. Construction of facilities such as hospitals and diagnostic and treatment clinics in those areas where need is found, through grants-in-aid, if necessary. 3. A better cooperation between our medical, dental and nursing schools and this system of hospitals, so that doctors, nurses and technicians could be trained to staff these facilities. 4. Broadening of preventive public health services and sanitation programs. This problem of better medical services to all the people of Alabama has been recognized by the Alabama Medical Association for several years. In 1944 a committee was appointed by our president to investigate a method of securing a broader and better type of medical services for our people. At a meeting of the committee a definite program was sponsored.

Action of State Rural Health Committees

DR. A. S. BUCHANAN, Prescott, Ark.: Our program was instigated in 1942 by the county medical society or by the Farm Security Agency and had the cooperation of the county medical society. This little program has succeeded very satisfactorily. We have had no trouble in the organization or in the management as to whether it would suit all communities and neighborhoods in the state. To make it possible there would have to be some changes made to suit each community. I think that would be true in the organization of a national program. It has been satisfactory in that county. There has been one in Texas, one in Mississippi, one in Arkansas and perhaps one in Georgia. I understand that these other counties have been equally satisfactory. There was some question as to whether we would as a county medical society have the management of the program. We were accused of cooperating with those in favor of socialized medicine. I want you to know that is not true. It is a very good program. It takes care of all the people, not only farmers. I think the majority of farm families that really need the assistance of others are on the program.

DR. FRED A. HUMPHREY, Fort Collins, Colo.: In Colorado we have attempted to solve the rural problem by prepayment health insurance. This is working under the Colorado Medical Service, Inc., and we are at present trying to scatter that all over the state. The previous speaker mentioned the Farm Security Agency. In western Colorado that was a complete flop. In eastern Colorado it worked fairly well and people got fairly good service. Dr. Mott stated that they were working from the top down. In Colorado we have five counties without medical service. In my opinion that is the place to start, where they do not have good medical service, and work up, not down. I belong to a county which is of 36,000 or 37,000 population. We have from thirty to thirty-five doctors. Medical service there is very good. The state and national public health services are doing their best to force us to put in a county health unit. What we would rather do would be to have them go into the counties that do not have medical service and do some good there. It is a mining problem rather than a rural problem in Colorado. We have only about five counties out of some ninety-five that have full health units.

DR. HARLAN A. ENGLISH, Danville, Ill.: The Rural Health Committee in Illinois is a new committee. We plan to have one meeting a year in each rural medical society, at which meeting representatives of all farm organizations in that county will be invited to discuss their rural medical and hospital problems.

DR. E. E. SHAW, Indianola, Iowa: Many counties in Iowa wish to put across a bond issue and build a hospital. Whether they can support it is a question. They don't feel that every county should have a hospital. Ours is one of the counties that hasn't a hospital. We don't need a hospital. It is healthy to see the Farm Bureau feel that a hospital should be built only where one is needed. We are also devising a medical care plan for farm groups. We have organized units for collecting agencies for hospital insurance. Many men are going into it. We have the medical service plan just getting started. We are already putting out a hospital plan in two rural counties in the state. They want statistics as to costs. We are anxious to enlarge medical and surgical plans. We shall in the next few years be able to put it in rural areas. The Farm Security Agency is very unsatisfactory. During the first year it worked fine. Doctors were almost 100 per cent in favor. In the second year the agency man came in and changed the thing completely.

DR. A. R. HATCHER, Wellington, Kan.: We have not tried any of the plans discussed here. I'm from Sumner County, which has a population of 27,000. We have about twenty-two doctors. There is a part time county health officer but soon we shall have a full time county health officer taking in a county adjoining us to the west which will make it possible for us to have a full time county health officer, sanitary engineer and nursing staff. We have forty-seven counties in Kansas, some of which have one doctor, some two, some none. There are a great many osteopaths. It is the intention of the hospital survey committee, of which I am a member, to give that part of our state the first attention in the way of building small community centers with offices, reception room, laboratory, emergency operating rooms and a few rooms for the doctor who may desire to locate there along with a full time county health officer. These other programs that have been discussed I am sure we haven't any particular reason in Kansas for even experimenting with. Even with the shortage of doctors, many people have not suffered want of medical care. Roads are available, hospitals there are good and even though you are 50 miles from a hospital you can get there in an hour. We're going to give our attention chiefly to the rural districts and get some real doctors, young doctors in health centers and try to apply the Hill-Burton bill, if it passes.

DR. CLARK BAILEY, Harlan, Ky.: Two years ago the medical economics committee reported to the House of Delegates that we should have an enabling act that would enable us to take part in a prepayment plan. We went before the legislature, and last week the governor signed the bill enabling us to go ahead and set up an organization to have a prepayment plan for the people of Kentucky. The medical economics committee asked the legislature for a revolving fund of $75,000 that would put two students through medical school if they will agree to practice in some designated rural community for the next five years after completing the internship. That passed but was vetoed by the governor. The medical association and the state association made donations to start a fund of that kind to take care of some rural counties that do not have doctors.

DR. GUY R. JONES, Lockport, La.: We have, as you have throughout the United States, a scarcity of doctors. We have tried the Farm Security Agency and found it to be a complete flop. Doctors have refused to work under that plan. We shall advocate a prepayment medical and hospital plan. The parish health officers are being urged to support state medicine, but they are working with Louisiana State Medical Society and fighting it. Those gentlemen are not for state medicine. In Louisiana osteopaths and chiropractors are prohibited by law. We are well organized and ready to follow any plan advocated by this meeting.

DR. H. B. ZEMMER, Lapeer, Mich.: Whatever has been done in Michigan has been done with the medical society as a whole. We are getting organized and will have some suggestions to make when we get back. Some three hundred farm groups and many grange groups are cooperating with Blue Cross. Michigan Medical Service is separate from the Blue Cross and we are proud of its accomplishments. It has had its greatest memberships in industrial groups and is now being extended to farm groups. We feel that it has done a splendid job in rural groups. We are hoping that the Hill-Burton bill will help us solve the problem of hospitals. Another thing we have obtained in Michigan is a uniform fee schedule for all government agencies, worked out by the council of the Michigan State Medical Society after much discussion. Adoption of this schedule made it possible to cooperate with the Veteran's Administration. On this program the service is for service connected disability. Before the war there was a preceptorship with the university. Juniors and seniors were assigned to doctors throughout the state. This was a splendid idea. It gives the student a fine chance to get some bedside manner and gives doctors a chance to come in contact with newer technics. I hope it can again be established.

DR. B. J. BRANTON, Willmar, Minn.: Minnesota is a state with two and one-half million people and eighty-four counties. About two thirds of the people are in the rural population, one third being urban. In the eighty-four counties of the state there are only three, four or five not having hospitals. Roads are excellent throughout. The need for the Hill-Burton bill is evident in some places. We have in Minnesota the number of hospitals we need at the present. The prepayment medical plan is going to serve a fine purpose. We have worked closely with the Farm Bureau. It has been a wonderful and friendly feeling to have people who control the destiny of some 60,000 farm families in the state behind us in our work. We are working with and in conjunction with Blue Cross, which now has about six thousand contracts in the state. We have put over a health education program.

DR. R. W. KENNEDY, Marshall, Mo.: We have plans for the extension of prepayment medical care and prepayment hospital care, information on placement of hospitals and enlarging the state university to four years with the final year in Kansas City to provide more doctors. We have a plan for extension of public health. To promote health among farm folks we have provided a committee in the woman's auxiliary and a speakers' bureau. Doctors in this area are called on to make health talks to farm people.

DR. E. M. GANS, Harlowton, Mont.: There has been a prepaid medical service established in Montana. There is a low bracket group, up to $5,000 a year.

MR. M. C. SMITH, Lincoln, Neb.: We do not have a rural health committee. There is a Nebraska Health Planning Committee as part of the extension of the Agricultural School in Nebraska. The state medical association has had representation on that committee. We are another of those states that have four counties without a physician. The committee has established, with the approval of the state medical association, a cooperative health plan in Thurston County, where there has been no physician. This cooperative plan has worked with a varied degree of success. The greatest difficulty is to keep a doctor out there. It is very difficult to keep a doctor in sparsely settled areas. A doctor wants a better educational opportunity for his children. People up there have plenty of money and are willing to spend it to have a doctor in their own community. They took an old hotel and built a hospital there. The plan worked, except that they can't keep a doctor there. We went through that area with the Farm Security Agency and organized eighteen or twenty plans operating all over the state. As soon as the farmers had raised two or three crops they didn't like the Farm Security Agency. Farmers were the ones that wanted to discontinue the plans. The farm bureaus, the farmers themselves, want to pay their own bills. As to the Hill-Burton bill, we do need some hospitals in Nebraska. We hope we shall have the opportunity to place some hospitals in Nebraska. Our greatest problem will be where to build hospitals. In this state we have a number of towns where they have started local campaigns to build hospitals, have raised money and want their own hospital. This committee will have the problem of going to the town and say here is the reason why the hospital will not be successful in this territory.

DR. DAN MELLEN, Rome, N. Y.: Our state is well organized for the prepayment insurance plan. It seems to be successful, and recently a committee made a survey in the rural districts relative to the hospitals, the laboratory equipment and staff

and the number of physicians. As far as placing physicians, we have been working in conjunction with the committee on veterans' affairs. As we get calls from these areas mostly in the northern part of the state we try with the committee on veterans' affairs to place these men.

DR. W. A. WRIGHT, Williston, N. D.: We haven't the constructive program that we have had people tell us about today. There is a misconception as to the practice of medicine. May I tell you how we think rural medicine should be practiced? It should be clustered around certain metropolitan centers where people go to buy things. There is no future in trying to put a doctor in every hamlet, as was felt thirty years ago. It is easy for a patient 50, 60 or even 100 miles away to get to a doctor with present methods of transportation. Perhaps it is a hardship, but I would rather travel 80 miles in North Dakota than 1 in Chicago. Doctors should be educated for rural practice. The tendency of the medical schools is to look down on the general practitioner and exalt the specialist. If it was made more honorable, more young men would become general practitioners. We need more good general practitioners. It takes a large area to support a specialist. If we are going to have good general practitioners we must have more trained in college days to be just that. We realize that it is a hardship not to have a doctor in a county. But the county is no longer a unit. It is the natural trading center. In the next county or over, there may be a good health center. I deplore using the county as a unit.

DR. CARL S. MUNDY, Toledo, Ohio.: For years we have had a health subcommittee of the planning committee, composed almost entirely of laymen, but the state association has had a representative on that committee since its beginning. Through that representative our state association has been in touch with the thinking of the farm groups. This committee attempted a year ago to put into effect a prepaid plan on a small scale in one of our counties. The plan did not succeed, although it was supported generously by our state association. In the last few months we have started our prepaid medical service plan, which we call the Ohio Medical Indemnity, Inc. We are just now beginning to sell contracts. It is our intention to push the sale of these contracts in rural areas as rapidly as possible. We found the same thing in Ohio—an inertia among farmer groups to prepaid medical service. We are able to sell contracts to only about 30 per cent of their membership. We cannot determine the exact reason.

MR. KENNETH G. MANNING, Portland, Ore.: We do not have a rural health committee in our state. I have been sent here representing Oregon Physicians' Service, the association approved and sponsored by members of the state society. The setup has approximately 50,000 subscribers under the hospitalization plan. In the state of Oregon about 140,000 are covered. As for rural problems in that area, surprisingly I have not heard the name of Dr. Shadid in this meeting. Dr. Shadid comes from Oklahoma. He has been in Oregon and has sold one or two areas in the state on the idea of organizing a cooperative health center, hiring doctors and setting up health centers selling prepaid medical and hospital care. He is particularly interested in farm areas. In Salem, Oregon, they have adequate staff doctors. The Farmers' Union and other farm agencies have caught hold of the thing and are trying to sell membership. We don't have a serious problem in Oregon so far as medical service is concerned. We had experience with the Farm Security Agency in Oregon. The thing has been quite a flop. Doctors refuse to work for a percentage which is substandard.

MR. DICK GRAHAM, Oklahoma City: Dr. Shadid will run his chosen path and get little distance down the run. I have heard reference made to the Hill-Burton bill. According to statistics only two states do not have a very liberal surplus in their state treasuries. And you call on federal aid to do that which the local community should do. There has to be an end to this federal spending. I doubt if there is a community anywhere in the United States which cannot finance its own health needs. In Oklahoma we started with $100,000; we have already completed our survey, and if the Hill-Burton bill becomes a law on the basis of that division we should get only 175 a year. I have talked to many veterans who have never been in private practice. They went out of medical school into internship and then into the army. For four or five years they have had the finest medical facilities to work with. They had technicians and nurses. Those boys are utterly scared to practice by themselves. I would not suggest that the medical associations lower their standards but I do believe that the medical schools should take cognizance of the fact that those students may have to go into areas from an economic standpoint alone and practice without the help of the Hill-Burton bill and the technicians and the nurses and I hope that that day will come.

DR. AUGUSTUS KECH, Altoona, Pa.: We do have our rural problem. We're not organized. It belongs now in the committee on medical economics. The state society in conjunction with the state college of health and voluntary agencies selected three counties to survey. The Farm Security Agency has had some problems. Several communities have been organized, and we have felt that the physician would not get anything out of that practice. We have 236 state aided hospitals. Hospitals are covered within 30 miles. Good roads exist on which to go to and fro. We do not need new hospitals; we do need extension of every hospital in bed capacity. Our medical service has had a poor start but now since last year has grown. It has doubled the number of members and participating doctors. It is going it alone and not with connection with any other agency.

DR. A. W. BROWNING, Elloree, S. C.: We have good roads, schools and easily accessible hospitals. Our splendid state board of health is doing good work. Every county has a county officer and nurses. We have in our county the tuberculosis examination for schools, x-ray units in the county and x-ray at the tricounty examination. We have clinics there every week and in two or three towns every week. We have been trying to get a medical college in Charleston for years. Last June the legislature passed the bill for one and one-half million dollars for a doctors' hospital and also gave us two and one-half million dollars for a survey of the state and for medical centers if needed. I don't know any one in my section who can't get medical care or hospital care when needed. We have a publicity man to watch out for our interests and have a permanent committee, one from each district, to watch the political affairs in our state. We have Blue Cross insurance passed by the legislature and are trying to bring it into effect. We need more hospital beds, hospitals and small medical centers. We are thinking of subsidizing some students while at South Carolina Medical College at Charleston to serve two years in outlying places, also Negroes, as Virginia is doing; at the college in Nashville, Tenn. We believe in the American Medical Association plan of approved insurance, prepayment hospital and health insurance such as Blue Cross. We are having meetings all over the state with speakers discussing the Wagner-Murray-Dingell bill.

DR. A. P. PEEKE, Volga, S. D.: Our problem is the same as in Nebraska and North Dakota. We have about half a million population, 342 doctors, 142 over age 65, and 90 per cent of the medical profession are in small cities of 15,000 or 20,000. The big problem in our state is that we have 60 osteopaths practicing.

DR. H. H. SHOULDERS, Nashville, Tenn.: When the dislocations of a war period are still with us, it is no time to do permanent planning. The county as a unit is not a basis for location of hospitals and a county society. That should be considered on the basis of the logic of the situation rather than on county boundaries. The people in rural communities complain that doctors charge on a mileage basis. I think that was a good basis for the period when it prevailed. It seems to me that the time factor or some other factor should be used. Our profession within ourselves might present some correction. The general practitioner of medicine deserves a great deal more dignity and attention than he has received from the profession. We must improve the concept of the practitioner, and we have done so in Tennessee by an education program. The rural health problem is as different from the city problem as it can be. The farmer's home is a unit with individual water supply, individual all the way through. In Tennessee we would make some studies, and

this helped get the appropriation. The doctors were alert doing immunization of all diseases and getting reasonable fees for it. By doing that they had to keep a nurse. Doctors discharged nurses because they hadn't enough practice. That has influenced the economics of rural practitioners. We made some studies of counties with equal population in the same general area. Rural counties with an alert profession well trained showed a mortality rate no different from that of a county with an equal population with a full time health unit. The solution of the rural health problem resolves itself with getting a qualified doctor into the area. If immunization will control a lot of diseases, it becomes individual medicine, both preventive and curative. Probably we have sold the idea, and that has been made possible by the fact that we have never drawn any sharp distinction between public health activity and individual health activity. If we do that most of our problems will be solved.

DR. CROCKETT: In the state of Indiana the house of delegates has organized a committee which is setting up the machinery whereby men who are first class general practitioners will be so certified by the state society after due examination. In that way we hope to do that very thing—give every man in the general practice of medicine an opportunity to stand apart on account of the excellence of his work.

DR. B. E. PICKETT SR., Carrizo Springs, Texas: Our executive committee passed a resolution to accept any plan that met with the specifications set up by the American Medical Association. Mr. Ketchum from Michigan suggested that the medical and surgical plan as offered by the state, paralleling the Blue Cross, be accepted and we commended him. This plan is getting under way. We have some 15,000 subscribers. The Blue Cross is quite active in the state, and there are few communities that are not within 30 miles of a hospital.

DR. K. B. CASTLETON, Salt Lake City: We inaugurated a publicity plan in which we made use of a local newspaper having the largest statewide coverage. Since then we have had articles published dealing with medical problems and case reports. In these articles no reference was made to doctors' names, hospitals or communities. We feel that the articles have done a great deal of good in combating adverse publicity received in the last few years. We also use radio for this purpose. We are forming a speakers' bureau to supply speakers for civic groups, women's groups and schools. We need more hospitals or more beds. We need more hospitals where distances are great and doctors scarce. People in Utah don't want federal money for this; they are not interested in the Hill-Burton bill. The church offered help for supplying different hospitals needed. Several hospitals were built and are maintained by the Mormon Church. This plan is endorsed by the Utah State Medical Society and we hope it will fill our hospital needs without calling on federal funds. We have a prepayment plan based on the experience of Michigan and California.

MR. JOHN W. BROWNLEE, Rutland, Vt.: We have a governor's advisory health council on which the medical society is represented, dentists, public health, public welfare and various other organizations. That is a temporary organization and is to develop a program for better health in Vermont. It is the hope of the medical society when that work is completed in the next few months that a permanent health council will be set up to embrace all health agencies and also business and labor. We don't have the problems in Vermont that some of you have. We are inaugurating a medical care plan.

DR. H. B. MULHOLLAND, Charlottesville, Va.: In 1940 it was realized that the rural health situation was bad. A committee was formed of members of most of the farm organizations and members of the medical, dental and nursing professions. This committee was instrumental in having a legislative advisory committee appointed who reported to the governor and legislature, made recommendations, instituted a survey for needs of health centers and hospitals and appropriated $10,000 for a survey. We think it is important to go ahead with that because so many communities now have been stimulated to erect health centers and hospitals that are not warranted. We shall have extension of the health departments. We also got $600,000 for examination of school children. This is an important start for the health of the people living in rural areas. We hope to have school children examined four times during their school life. We got an enabling act so that the state can lend some of the money it has to invest for construction of health centers and hospitals in areas where they are needed as shown by the survey, the loan to be at a small rate of interest and to be a long term loan. The rural health committee is also backing the state health council composed of thirty-five or forty organizations in the state, including all farm organizations in the state. The legislature also took our advice to continue the study of health problems and particularly the extension of prepayment insurance plans to the medically indigent. We feel that we can solve these problems on a state and county level.

MR. JAMES P. NEAL, Seattle: This program in Washington for setting up a prepayment plan was organized in 1917 and has been growing until some twenty-one units have been set up coordinated through the state bureau, all under the sponsorship of the Washington Medical Society, covering more than a quarter of a million people. In 1944, in order to avoid any insurance laws of the state, the doctors created and chartered the insurance company. The insurance covers all the subscribers of the local organization. This group has been approached by the executive committee of the state farm bureau for a contract which would cover their farmers. Arrangements have been made and contracted now in effect in one area on a trial basis providing hospital and medical care for a man and his family for $7 a month. In another area quite a number of families in the farming area have complete medical and hospital care as far as the head of the family is concerned but with just hospital care for members of the family, the rate being $4.55 a month. These two plans are paying doctors a reasonable fee schedule. The Farm Security Agency started in our state. All moved out with the exception of one county. The price for that was $35 a year. We are also caring for service men, beginning the first of the month, under contract made with the Veterans Administration, serviced and handled through the state association.

DR. C. N. NEUPERT, Madison, Wis.: If groups are to meet the suggestions in his program, I would propose that there must be some required reading. Whatever you think of some of these things, if you are planning to go into rural health conferences, be ready. Know what they are thinking. Farm folks are acquainted with what is going on. Wisconsin people in rural areas seem to be doing just as well as in urban areas. We have no health centers. I have been wondering if that might not be a good development in Wisconsin. We have our survey under way. We have a statewide medical and hospital care insurance policy in connection with the state insurance companies. Another in Milwaukee is going along with Blue Cross. They are both developing. As far as the Farm Security Agency is concerned, it is in two counties and is working all right. In this year of operation we have paid out 100 cents on the dollar. Don't overlook health agencies. Get close to them.

DR. H. N. SMITH, Brookville, Ind.: We have had a rural medical care committee for three years. We tried this farm security program in several counties in Indiana. It didn't work out so well. It was tried in the county I am in, but as soon as the people were able to pay for their medical care they dropped it. Doctors didn't like it, and patients didn't seem to care much for it. I know there is to be a prepayment medical plan in the state of Indiana.

DR. JAMES F. DOUGHTY, Tracy, Calif.: We don't have many people worried about rural medical care. The indigent are taken care of in county hospitals by a paid staff. The non-indigent rural farmer in California is a very progressive person who appears as though he was poor and dies rich and the doctor dies poor. There is a California Physicians' Service for non-indigent people. It offers service to employed groups and is now offering it to the rural families through the Grange of California. We service them and they pay for service plus the cost of administration. I am impressed with the need for more country doctors of good qualities. Unless doctors are educated for general practice instead of for specialists in the city we shall not have good medical care for rural areas. An average well trained general practitioner can well take care of most ills.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

145:633-736 (March) 1946

Renal Clearance of Pantothenic Acid. L. D. Wright, K. H. Beyer, Helen R. Skeggs, H. F. Russo and Elizabeth A. Patch.—p. 633.
Nature of Volume Effects in Renal Clearances. R. F. Holden Jr. and H. A. Bulger.—p. 638.
Effect of Protein Deficiency and Cholesterol Feeding on Liver of Dogs. Tsan-Wen Li and S. Freeman.—p. 646.
Experimental Lipemia and Hypercholesterolemia by Protein Depletion and by Cholesterol Feeding in Dogs. Tsan-Wen Li and S. Freeman.—p. 660.
Importance of Exogenous Fat in Fatty Infiltration of Liver of Dogs. Tsan-Wen Li and S. Freeman.—p. 667.
Relative Sensitivity of Mucosal and Peritoneal Surfaces of Guinea Pig Ileum to Histamine, Acetylcholine and Specific Antigens. G. A. Feigen and D. H. Campbell.—p. 676.
Compensatory Growth of Kidney After Unilateral Nephrectomy in Thyroidectomized Rats. I. T. Zeckwer.—p. 681.
Blood Oxygen Saturations and Duration of Consciousness in Anoxia at High Altitudes. C. E. Hoffman, R. T. Clark Jr. and E. B. Brown Jr.—p. 685.
Effects of Feeding Thyroid Substance and of Adrenalectomy on Activities of Succinoxidase and Cytochrome Oxidase in Liver Tissue of Rats. S. R. Tipton, Martha Jean Leath, Isabel H. Tipton and W. L. Nixon.—p. 693.
Renal Blood Flow and Renal Clearance During Hemorrhagic Shock. E. E. Selkurt.—p. 699.
Initiation of Sweating in Response to Heat. E. F. Adolph.—p. 710.
Estimation of Cutaneous Blood Flow with Photoelectric Plethysmograph. A. B. Hertzman, W. C. Randall and K. E. Jochim.—p. 716.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

30:99-204 (March) 1946

Venereal Disease in Army Air Forces in Continental United States, 1942-1944. R. Dyar and J. R. Scholtz.—p. 99.
Use of Penicillin in Treatment of Syphilis of Central Nervous System: Report of 100 Patients. J. L. Callaway, R. O. Noojin, A. H. Flower Jr., Beatrice H. Kuhn and Kathleen A. Riley.—p. 110.
Seroresistance (Wassermann Fastness) in Syphilis: Discussion for Patient. J. E. Moore.—p. 125.
*Penicillin Therapy of Early Syphilis in 14,000 Patients: Follow-Up Examination of 792 Patients Six or More Months After Treatment. D. M. Pillsbury.—p. 134.
Blood and Urine Arsenic Levels of Patients with Early Syphilis Under Intensive Arsenotherapy. A. B. Cannon, J. K. Fisher, J. J. Rodriguez, G. F. Beattie and Eugenia H. Maechling.—p. 144.
Venereal Disease Problem in Woman's Federal Reformatory: Study of Women Released Over a Period of One Year. H. I. Blair.—p. 165.
Problem of Reinoculation of Human Beings with Spirocheta Pallida: Review of Literature. H. Beerman.—p. 173.

Penicillin Therapy in Early Syphilis.—According to Pillsbury penicillin was adopted as the drug of choice in the treatment of syphilis by the United States Army in the European Theater of Operations on June 26, 1944. As of June 15, 1945 over 14,000 patients with early or latent syphilis, or with syphilis which had not responded satisfactorily to previous treatment with standard or intensive arsenobismuth therapy, had received treatment with penicillin. It was found that the toxicity of penicillin therapy in early syphilis is negligible. Infectiousness, with rare exceptions, is controlled promptly. The incidence of infectious relapse after penicillin therapy is low. Infectious relapse will usually occur within twenty weeks after treatment. The lesions of relapsing syphilis appear most frequently on the genitalia in male patients. Realization of the full benefits of a single course of penicillin therapy in syphilis is dependent on the promptness with which the diagnosis of syphilis is made after infection. Achievement of seronegativity six months after the initial treatment is significantly lower in seropositive primary and in secondary syphilis than in seronegative primary syphilis. The incidence of asymptomatic neurosyphilis disclosed by spinal fluid examination performed six to eight months after treatment is extremely low, especially as compared with the incidence after standard arsphenamine-heavy metal therapy. The promise of penicillin as the best single agent against syphilis is being fulfilled.

American Review of Tuberculosis, New York

53:103-194 (Feb.) 1946

*Chest Photoroentgenography in Army Physical Examinations: Review of 40,283 Chest Photoroentgenograms at Buffalo Recruiting and Induction Station. I. A. Schiller.—p. 103.
Miliary Tuberculosis of Bone Marrow. E. M. Schleicher.—p. 115.
Pyopneumothorax: Treatment of 2 Cases with Penicillin. K. T. Bird, B. P. Bushueff and F. P. Dawson.—p. 122.
Transcutaneous Tuberculin Test (Corper): Its Evaluation as Compared with Mantoux Test. L. W. Holden.—p. 129.
Anatomic Studies on Human Tuberculosis: XXI. The Reinfection Complex: Additional Observations. K. Terplan.—p. 137.
Treatment of Experimental Ocular Tuberculosis with Promin. W. Steenken Jr., E. Wolinsky and F. H. Heise.—p. 175.

Chest Photoroentgenography.—Schiller presents the results of routine chest radiographic examination of 40,283 men with 4 by 5 inch stereoscopic photoroentgenograms at the Buffalo induction station. Eight hundred and fifty-six, or 2.12 per cent, were rejected because of pulmonary disease as revealed in the photoroentgenogram, of which 632 were for tuberculosis and 224 for nontuberculous pulmonary diseases. Approximately 40 per cent of the men rejected were deferred temporarily. Thus of the 632 cases rejected for tuberculosis 258 were temporarily deferred in order to determine the stability of the lesion. The rejection rate for tuberculosis varied considerably, the oldest group showing the highest rate and the youngest group the lowest. The high rate among the older men was the result of a greater prevalence of arrested tuberculosis. Comparison of the rates of rejection obtained at the Buffalo induction station with those observed in the southern New York recruiting district showed essentially the same rejection rate for active tuberculosis in the two localities. The greater prevalence of arrested tuberculosis in the Buffalo region was attributed to the generally older age level of the men examined.

Annals of Surgery, Philadelphia

123:161-320 (Feb.) 1946

Vascular Injuries of Extremities in Battle Casualties. C. A. Rose, O. W. Hess and C. S. Welch.—p. 161.
Penetrating Head Wounds: Experiences from Italian Campaign. R. A. Munslow.—p. 180.
Treatment of Jaw and Face Casualties in British Army. P. Clarkson, T. H. H. Wilson and R. S. Lawrie.—p. 190.
Repair of Soft Tissue War Wounds. B. W. Rawles Jr.—p. 209.
*Pulmonary Embolism: Statistical Study, with Particular Reference to Value of Certain Preventive Measures. C. R. Lam and D. H. Hooker.—p. 221.
*Congenital Cystic Lung: Successful Pneumonectomy in a Three Week Old Baby. R. E. Gross.—p. 229.
Delayed Internal Fixation of Compound Battle Fractures in Mediterranean Theater of Operations: Case Histories with Illustrations; Follow-Up Study in Zone of Interior. O. P. Hampton Jr.—p. 238.
*Surgical Significance of Accessory Spleen. G. M. Curtis.—p. 276.
Biliary Ascariasis: Report of 19 Cases. S. C. H. Yang and P. J. Laube.—p. 299.
Sympathectomy for Ischemia Following Femoral Artery Ligation. R. R. Crutcher.—p. 304.

Pulmonary Embolism.—Lam and Hooker made a study of the fatal and nonfatal embolic complications which occurred in 118,611 operations performed at the Henry Ford Hospital in Detroit in the twenty-one year period between 1924 and 1944. Two hundred and eighty patients had pulmonary emboli, of which 78 were fatal. The diagnosis was established at necropsy in 70 per cent of the fatal cases. Both fatal and nonfatal embolism occurred more frequently in men than in women, the ratio being about 3:2. All embolic episodes occurred most frequently in the fifth decade, while fatal embolism was noted oftenest in the sixties. It was expected that abdominal operations would show the complication frequently and head and neck operations not at all. This proved true. Gastric operations and prostatectomy were the worst offenders. There is no report of a successful Trendelenburg operation in this country. Almost half of the patients in this series died in less than ten minutes, three fourths died in less than half an hour and only 10 per cent lived more than hour. Theoretically it would be possible to operate on only a fourth of the patients. Since the adoption of anticoagulant therapy and prophylactic femoral vein ligation there has been a very low mortality rate in cases selected for

treatment. However, these measures have not prevented a number of sudden and unexpected fatal embolisms. Early ambulation offers the most promise as a preventive measure easily applicable to the majority of surgical patients.

Successful Pneumonectomy in a Three Weeks Old Baby for Congenital Cystic Lung.—Gross reports that a 3 weeks old baby with congenital cystic disease of the left lung withstood total pneumonectomy in a satisfactory manner and has had an uncomplicated postoperative course.

Surgical Significance of Accessory Spleen.—Curtis and Movitz present a list of diseases for which 174 consecutive splenectomies and 4 abdominal explorations were done. In this series of 178 consecutive patients operated on for various splenic diseases 56, or 31.4 per cent, presented accessory spleens. The 50 per cent incidence in the first decade as well as the 39.1 per cent in the second decade is even greater than the increased incidence of accessories ordinarily found in the young with "normal" spleens. The decreasing incidence with advancing age is presumed to occur normally by gradual involution and atrophy. The onset of a pathologic process in splenic tissue apparently causes the accessory to remain and thus occurs the increased frequency of accessories in those with certain splenic diseases. The greatest incidence of accessories was 57.1 per cent in the first decade in congenital hemolytic icterus. Save for the third decade, the incidence of accessories in congenital hemolytic icterus is greater than in primary thrombocytopenic purpura. The number of accessories per patient varied from one to ten. The presence of splenules throughout the peritoneum appears to be a different clinical entity from true accessory spleens and is now known as splenosis. They are to be differentiated because (1) they originate by transplantation of fragments of splenic tissue, usually scattered about the peritoneum by hemorrhage from a ruptured spleen, (2) they usually occur in great numbers, reportedly varying from 42 to 400, and (3) they are diffusely distributed throughout the peritoneum. The occurrence of splenosis is closely related to splenectomy. To avoid overlooking accessory spleens a routine search is made, after the major spleen has been removed, in the following approximate order: (1) hilar region, (2) splenic pedicle, (3) retroperitoneal region surrounding the tail of the pancreas, (4) the great omentum and especially along its attachment to the greater curvature, (5) colic ligamentary attachments, (6) mesentery of both large and small intestine and, (7) in the female, the left adnexa. The two recurrences thus far observed in this series of 174 consecutive splenectomies are reported in detail, 1 with primary thrombocytopenic purpura and the other a striking case in which recurrence of congenital hemolytic icterus was relieved by removal of two accessory spleens at a second operation. Pedunculated accessory spleens may cause acute abdominal symptoms from infarction due to pedicle torsion. This is shown in 2 such case reports.

Archives of Internal Medicine, Chicago

77:121-236 (Feb.) 1946

Streptococcic and Nonstreptococcic Disease of Respiratory Tract: Epidemiologic Observations. L. A. Rantz, Helen H. Rantz, P. J. Boisvert and W. W. Spink.—p. 121.
Progressive Bilateral Bullous Emphysema. A. H. Price and G. Teplick.—p. 132.
*Fulminating Meningococcemia with Vascular Collapse (Waterhouse-Friderichsen Syndrome): Report on 4 Adult Patients Who Recovered. D. O. Wright and L. B. Reppert.—p. 143.
Atypical Hemolytic Anemia: Observations, with Particular Reference to Use of Transfusions in Study of Hemolytic Mechanisms. L. E. Young and J. S. Lawrence.—p. 151.
Absorption, Distribution and Excretion of Streptomycin. J. D. Adcock and R. A. Hettig.—p. 179.

Recovery in Fulminating Meningococcemia.—Wright and Reppert report 4 nonfatal cases of fulminating meningococcemia with severe vascular collapse which were clinically indistinguishable from cases of the Waterhouse-Friderichsen syndrome. The patients were adults. Treatment consisted in administration of sulfadiazine, large amounts of plasma and fluids intravenously to combat the critical vascular collapse and adrenal cortex substance. Deductive evidence suggests that hemorrhagic destruction of the adrenal glands is not the primary cause of death. Early clinical diagnosis and prompt institution of therapy without waiting for laboratory aid are imperative.

Archives of Ophthalmology, Chicago

35:71-198 (Feb.) 1946

Basket Type Implant for Use After Enucleation. N. L. Cutler.—p. 71.
*Uveal Blastomycosis. J. V. Cassady.—p. 84.
Acid Burns of Eye. J. S. Friedenwald, W. F. Hughes Jr. and H. Herrmann.—p. 98.
Tests for Detection and Analysis of Color Blindness: II. Comparison of Editions of the Ishihara Test. LeGrand H. Hardy, Gertrude Rand and M. Catherine Rittler.—p. 109.
Edema of Cornea Precipitated by Quinacrine (Atabrine). W. P. Chamberlain Jr. and D. J. Boles.—p. 120.
Return of Vision in Transplanted Adult Salamander Eyes After Seven Days of Refrigeration. L. S. Stone.—p. 135.
Ocular Dermatitis from Local Penicillin: Report of 2 Cases. A. Schultz.—p. 145.
*Congenital Malformations Induced in Rats by Maternal Vitamin A Deficiency: I. Defects of the Eye. J. Warkany and Elizabeth Schraffenberger.—p. 150.
Corneal Transplantation and Preliminary Iridectomy. C. I. Thomas.—p. 170.
Contact Eye Cup for Corneal Baths with Solutions of Penicillin. G. C. Struble and J. G. Bellows.—p. 173.

Uveal Blastomycosis.—Cassady observed a man aged 64 who was admitted to the hospital with polyarthritis of six months' duration and cutaneous lesions of six weeks' standing. There was a generalized papular disease of the skin, with some pustules covered with large scabs. The right pupil was sluggish and small. The temperature varied from 99 to 100 F. almost every afternoon but was normal in the morning. Sometime later he complained of severe pain in his right eye. The lesions over the trunk were in various stages of evolution, healing with violaceous, atrophic scars. Biopsy of the skin revealed numerous giant cells in which double, refractile, yeastlike bodies were seen. They were thought to be Blastomyces hominis, typical of blastomycosis of the skin. Roentgenograms of the right knee, tibia and fibula and the right side of the skull revealed irregular areas of destruction without reaction of the bone around the lesions. The appearance and location of the lesions in the bone, together with the type of lesion in the lungs, favored the diagnosis of blastomycosis. The patient had severe photophobia, moderate injection of the ciliary body of the right eye, a total posterior synechia and a small, fixed pupil. At 8 o'clock on the free margin of the iris was a yellowish tubercle-like nodule. Extending into the angle of the anterior chamber at the limbus was another yellow tubercle-like lesion. Paracentesis of the anterior chamber and examination of the aqueous for blastomycetes gave negative results. Necropsy revealed blastomycotic iridocyclitis, cataract and secondary glaucoma. The anatomic diagnosis was blastomycosis involving the skin, lungs, prostate gland, kidneys, bone and eye.

Congenital Defects of Eye and Vitamin A Deficiency.—Warkany and Schraffenberger found that when female rats were raised and bred on a dietary regimen which led to extreme vitamin A deficiency during pregnancy there were congenitally deformed offspring. These newborn rats had various defects of the skeleton and of some of the soft tissues. Study of histologic sections of the eyes revealed a fibrous retrolenticular membrane in place of the vitreous in every specimen. In addition there were frequently colobomas, eversion and abnormal structure of the retina, rudimentary development of the iris and of the ocular chambers, defects of the cornea and of the conjunctival sac and lack of fusion of the lids. With the last mentioned defect the abnormal eyes could be recognized by external inspection. When the maternal diet was supplemented with vitamin A during pregnancy, the eyes of the young were normal.

Georgia Medical Association Journal, Atlanta

35:27-54 (Feb.) 1946

Control of Stature. J. K. Fancher.—p. 27.
Chronic Hyperthyroidism. T. C. Davison.—p. 34.
Pulsating Hematoma. J. D. Martin Jr.—p. 37.
Lichen Planus Treated with Calcium Lactate. D. B. Ware.—p. 40.

35:55-102 (March) 1946

Basic Principles in Treatment of Cancer. J. L. Campbell.—p. 55.
How Permanent Are Results of Transurethral Prostatic Resection? H. P. McDonald and A. J. Filip.—p. 59.
Forty Years of Medicine: Science, Art, Organization in Georgia. J. W. Simmons.—p. 62.

Journal of Infectious Diseases, Chicago

77:177-254 (Nov.-Dec.) 1945

*Effect of Triethylene Glycol Vapor on Air Borne Beta Hemolytic Streptococci in Hospital Wards: III. Action of Glycol Vapors at Low Relative Humidities. M. Hamburger Jr., Valerie Hurst, O. H. Robertson and T. T. Puck.—p. 177.
Studies on Nutrition and Avian Malaria: IV. Protein Deficiency. A. O. Seeler and W. H. Ott.—p. 181.
Phase Variation of Andrewes in Coliform Bacterium. P. R. Edwards and Mary G. West.—p. 185.
Culturing of Blood Clots for Brucella Organisms. D. Evelyn West and E. K. Borman.—p. 187.
Experimental Gonococcal Infection of Rabbit's Eye: I. Method of Production. C. P. Miller, M. J. Drell, Velma Moeller and Marjorie Bohnhoff.—p. 193.
Id.: II. Course of Disease and Its Pathology. M. J. Drell, C. P. Miller, Marjorie Bohnhoff and Velma Moeller.—p. 201.
Id.: III. Treatment with Prophylactic and Therapeutic Agents. C. P. Miller, Marjorie Bohnhoff and Velma Moeller.—p. 216.
Immunologic Relationships of Plasmodium Gallinaceum and Plasmodium Lophurae. W. H. Taliaferro and Lucy Graves Taliaferro.—p. 224.
*Susceptibility of Vervet Monkeys to Poliomyelitis Virus in Flies Collected at Epidemics. J. L. Melnick and R. Ward.—p. 249.

Effect of Triethylene Glycol Vapor in Hospital Wards.—Early laboratory studies on the bactericidal action of glycol vapors revealed that maximum efficiency is obtained at relative humidities between 40 and 60 per cent. Equally effective killing could be achieved at lower humidities only when higher concentrations of glycol were employed. Later, certain observations in hospital wards suggested that an appreciable bactericidal action may be exerted by triethylene or propylene glycols when the relative humidity is as low as 35 or even 25 per cent. Hamburger and his associates have found that the bactericidal effect of triethylene glycol vapor on air borne hemolytic streptococci in hospital wards at relative humidities of 18 to 32 per cent is substantial, though the reductions are less than those achieved when the humidity is maintained at 40 to 50 per cent. The effect has been noted both on streptococci liberated into the air during bed making and on those present during "quiet periods."

Susceptibility of Vervet Monkeys to Poliomyelitis Virus in Flies.—Melnick and Ward tested flies trapped in four epidemic areas in 1943 and 1944 for poliomyelitis virus in vervet (Cercopithecus ethiops pygerythrus) monkeys from East Africa. Eleven of this species of monkey were used for the tests. Experimental poliomyelitis was produced in 2 vervet monkeys inoculated with flies from two of these epidemic areas: urban Chicago and rural North Carolina. This indicates that another experimental host, at present more available than cynomolgus or Java monkeys, is susceptible to poliomyelitis virus in flies.

Nebraska State Medical Journal, Lincoln

31:81-120 (March) 1946

Benign Gastric Tumors: Report of 3 Cases. G. W. Covey and F. L. Rogers.—p. 85.
The Deafened School Child in Nebraska. E. P. Fowler Jr.—p. 91.
Bronchogenic Carcinoma of Lung: Report of Case. J. C. Eagan.—p. 94.
Response of Physician to Regimentation. R. W. Fouts.—p. 99.
Nebraska Surgical Plan—Its Accomplishments and Its Aims. A. J. Offerman.—p. 104.

31:121-172 (April) 1946

Mental Public Health—A Blueprint. R. H. Felix.—p. 124.
Symposium on Penicillin: Penicillin in Medicine. R. W. Bliss.—p. 129.
Use of Penicillin in Urology. C. A. Owens Jr.—p. 132.
Pharmacology and Methods of Administration of Penicillin. A. C. Andersen.—p. 133.
Frontal Lobotomy. W. A. Muehlig.—p. 137.

New Orleans Medical and Surgical Journal

98:399-442 (March) 1946

Carcinoma of Cervix: Attempted Follow-Up Study of 500 Cases: III. Road to Improvement in Results. P. Graffagnino and Elizabeth M. McFetridge.—p. 399.
Rupture of Ileum in Uremia. V. D'Ingianni and Hazel Ann D'Ingianni.—p. 406.
Herniation of Temporal Lobe into Cerebellar Fossa. D. H. Echols and J. A. Rickles.—p. 408.
Osteoid Sarcoma of Breast: Case Report. J. S. Couret.—p. 412.
Resuscitation of Asphyxiated Baby Delivered by Cesarean Section. J. D. Russ.—p. 415.
Summarized Review of New Orleans Charity Hospital Surgical Deaths from July 1, 1943 to July 1, 1944. F. L. Loria.—p. 417.
Present Status of Use of Tetanus Toxoid. F. G. Gruich.—p. 420.

New York State Journal of Medicine, New York

46:449-560 (March 1) 1946

Studies on Problem of Repeated Miscarriage: I. Genital Hypoplasia. R. Kurzrok.—p. 493.
X-Ray and Public Health, with Special Reference to Tuberculosis. H. R. Edwards.—p. 498.
Increased Urinary Frequency in Women Caused by Extrinsic Genitourinary Tract Lesions. J. A. Lazarus.—p. 501.
*Hodgkin's Disease in Children. H. Charache.—p. 507.
Sclerosing and Surgical Treatment of Varicose Veins. S. R. Hirschman.—p. 510.
Premedication for Anesthesia. J. P. Curran.—p. 513.
Treatment of Migraine and Related Headaches. M. A. Goldzieher.—p. 516.
Neostigmine in Disorders of Colon. M. H. Morris and A. Robbins.—p. 519.
Acute Syphilitic Nephrosis Treated with Penicillin. D. V. Holman and I. H. Makovsky.—p. 520.
Visceral Leishmaniasis. F. Kaminsky and G. K. Wever.—p. 522.
Acute Fulminating Ulcerative Colitis: Treatment with Streptomycin. B. Kirschner.—p. 525.

Hodgkin's Disease in Children.—Charache reports 11 cases of Hodgkin's disease in white children from 3 to 15 years of age, observed at the Brooklyn Cancer Institute from 1930 to the present. Seven of the patients were boys and 4 were girls. Three of the patients were one of homologous twins without the other twins being affected. The mother of one of the twins died from Hodgkin's disease. Of the 11 cases, 8 originated in glands of the neck; of these, 4 originated on the right side of the neck and 2 on the left side; 2 were bilateral. In 1 case there was general adenopathy, 1 originated in the left axilla, and in 1 there were primary skeletal manifestations. Six patients had an enlarged spleen and 4 an enlarged liver on admission. Eight had mediastinal involvement. There was mild eosinophilia in 4 cases. One presented 5 per cent eosinophils. One of the cases showed a terminal leukocytosis of 26,000, while 2 cases presented a terminal leukopenia. A moderate leukocytosis was present in the rest of the cases. Roentgen therapy was administered in all cases. This is the treatment of choice, although some localized lesions may lend themselves to complete surgical excision. The duration of life since the onset of the disease in 8 cases that could be followed was 19.75 months. Hodgkin's disease in children is comparatively rare. The only positive diagnosis is based on the microscopic study of an excised lymph node from the cervical or axillary region. Inguinal nodes are often associated with infection and do not always give a true picture of Hodgkin's disease. The prognosis of Hodgkin's disease in children is even more grave than in adults.

Northwest Medicine, Seattle

45:145-220 (March) 1946

Diagnosis of Acute Porphyria. M. H. Stiles, G. M. Pike and E. L. Berne.—p. 166.
*Death and Illness from Use of Carbon Tetrachloride. C. M. McGill.—p. 169.
Geniculate Syndrome: Case Report. N. K. Rickles.—p. 172.
Fractures Treated by Skeletal Traction or Dual Pin Fixation: Report of 252 Cases. F. J. Dwyer and D. H. Murry.—p. 173.
Disability Evaluation of Injured Extremity. W. C. Smith.—p. 178.
The Yakima Prepayment Plan. J. E. Bittner Jr. and G. W. Cornett.—p. 183.

Death and Illness from Use of Carbon Tetrachloride.—Four men were assigned to clean the glue off a newly laid "masonite" floor covering. All soap solutions being unsatisfactory, one of the men suggested use of carbon tetrachloride as a solvent. Two 5 gallon cans of commercial carbon tetrachloride were issued to the workmen, who used it to scrub the floor, working on their hands and knees. Rubber gloves were issued to protect their hands. The job required the afternoon of one day and the forenoon of the next (a total of eight hours), after which the crew worked that afternoon waxing the same floor. The survivors did not believe they spent more than two thirds of the eight hours in actual working, the remainder being spent outside in the fresh air. As carbon tetrachloride is about five times as heavy as air, the heaviest concentration was on the floor, where the men were working, and probably exceeded the limit for acute poisoning of 1,000 to 1,500 parts per million of air. One patient had only a mild headache; a

second had insufficient exposure to be affected. The third patient developed headache, nausea, vomiting, diarrhea, vertigo and abdominal tenderness. Gastrointestinal disturbances persisted for a week, and anorexia, lassitude and mild headache persisted for another week. This patient lost 25 pounds (11 Kg.). The fourth patient died and the postmortem revealed acute hemorrhagic nephritis, acute toxic myocarditis with failure, bilateral hydrothorax, toxic splenomegaly and fatty degeneration of the liver.

Ohio State Medical Journal, Columbus

42:217-328 (March) 1946

Closure of Debrided War Wounds. G. D. Kirk and M. A. Hershey. —p. 245.
*Psoriasis: Therapeutic Review. I. L. Schonberg.—p. 254.
Prophylaxis Against Venereal Disease. H. Wain.—p. 256.
Meningioma of the Cervical Spinal Dura with Postoperative Uremia and Renal Insufficiency. W. B. Wartman.—p. 259.
Diseases of Gallbladder and Common Duct: Diagnosis and Management. R. P. Rizzo.—p. 260.

Therapy of Psoriasis.—Schonberg observed 207 cases of psoriasis among 7,000 dermatologic cases in a military hospital. In 35 of the patients the psoriasis was of such severity that hospitalization seemed advisable. Two of the patients had psoriasis guttata, whereas all the others had psoriasis vulgaris. The author gained the impression that the various types of parenteral and enteral medication were of no apparent value in this series of cases. Exacerbations were most prevalent where infiltrated patches remained. Dietary measures were of questionable value. Autohemotherapy seemed to benefit only the acute cases of psoriasis guttata. Genital and intertriginous, nail and scalp lesions were most resistant to therapy. Nail lesions did not respond to any measures. Although there was some evidence of familial tendency in several of the cases, no definite conclusions could be drawn. The best method of therapy is external. A soap suds soak and keratolytic preparations were employed for the first few days of treatment. This was followed by a 5 per cent crude coal tar ointment in conjunction with ultraviolet, as suggested by Goeckerman. Residual lesions were treated with 1 to 3 per cent chrysarobin and ultraviolet. Certain cases of psoriasis will not be influenced by therapy of any kind.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

21:125-226 (Dec.) 1945

Incidence and Distribution of Schistosoma Mansoni and Other Helminths in Puerto Rico. T. H. Weller and G. J. Dammin.—p. 125.
Incidence of the Rh Agglutinogen Among Puerto Ricans. M. V. de Torregrosa.—p. 166.
Fleas of Puerto Rico. J. Maldonado Capriles.—p. 173.
Malaria Control in Dominican Republic. J. D. Caldwell.—p. 193.
Ova of Schistosoma Mansoni in Purged and Unpurged Fecal Specimens. F. Hernández Morales and J. Oliver González.—p. 209.
Poisoning by Oleoresin of Aspidium: Report of Case, with Postmortem Findings. F. Hernández Morales.—p. 213.

Quarterly J. Studies on Alcohol, New Haven, Conn.

6:415-594 (March) 1946

Alcohol and Creative Work: Part 1. Painters. Anne Roe.—p. 415.
Studies of Compulsive Drinkers: Psychologic Test Results. Florence Halpern.—p. 468.
Cultural Differences in Rates of Alcoholism. R. F. Bales.—p. 480.
Public Clinic Approach to Certain Aspects of Alcoholism. R. G. McCarthy.—p. 500.
Survey of Official Church Statements on Alcoholic Beverages. B. Y. Landis.—p. 515.
Classics of Alcohol Literature: "The Ocean Cruise of the Viennese," German Poem of the Thirteenth Century; Comments and Prose Translation. E. M. Jellinek.—p. 540.

Rocky Mountain Medical Journal, Denver

43:185-272 (March) 1946

A Doctor Looks at the Wagner-Murray-Dingell Bill. L. T. Brown. —p. 204.
Sialography. T. E. Beyer.—p. 210.
Delayed Suture of Wounds Associated with Fractures. R. C. Rounds. —p. 216.
Penicillin Nebulization in Bronchopulmonary Disease: Preliminary Report. A. Hurst.—p. 219.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

19:89-132 (March) 1946

Cytologic Analysis of Response of Malignant Tumors to Irradiation as Approach to Biologic Basis for Dosage in Radiotherapy. P. C. Koller and D. W. Smithers.—p. 89.
Nonmalignant Conditions of Esophagus. A. S. Johnstone, R. A. K. Harper, J. W. McLaren and Maria E. Grossmann.—p. 101.
Bronchopulmonary Dissociation, Due to Abnormal Artery, Visualized by Bronchography. L. G. Blair, D. M. Pryce and T. H. Sellors.—p. 118.
Case of Secondary Amebiasis of Lung. W. Campbell.—p. 120.
"Bite-Wing" X Rays—Scheme for Mass Dental Radiography. W. Harvey.—p. 124.
Familial Brachydactyly with Associated Bilateral Coxitis. J. F. Brailsford.—p. 127.

British Journal of Surgery, Bristol

33:201-300 (Jan.) 1946

*Surgery of Thymus Gland. G. Keynes.—p. 201.
Constrictive Pericarditis. T. H. Sellors.—p. 215.
The Last 'Hate': Account of Abdominal Injuries of the V-1 and V-2 Phases of War on Britain and of Shelling of Dover. G. Gordon-Taylor.—p. 230.
German Hospital Center at Abano Terme. F. Mitchell-Heggs and W. J. Walter.—p. 235.
Experimental Observations on Use of Absorbable and Nonabsorbable Plastics in Bone Surgery. G. Blaine.—p. 245.
Interesting Cervical Tumors: Report of 3 Cases.—p. 250.
Penetrating Wounds of Chest. W. F. Nicholson.—p. 257.
Survey of Abdominal Wounds in 21 Army Groups (June 1944-May 1945). A. E. Porritt.—p. 267.
Spontaneous Gangrene of the Scrotum (Fournier's Gangrene). O. T. Mansfield.—p. 275.
Case of Hindquarter Amputation for Chondromyxosarcoma of Right Thigh. I. M. Hill and I. P. Todd.—p. 277.
Spontaneous Rupture of Spleen in Sarcoidosis. I. James and A. J. Wilson.—p. 280.
The M. E. M. Sphygmoscope in Vascular Injuries. F. B. Mallinson and D. O. Williams.—p. 282.
Relative Incidence of Sternomastoid and Ocular Torticollis in Aircrew Recruits. J. Grieve.—p. 285.

Surgery of Thymus.—Of Keynes's 51 patients subjected to thymectomy, 6 had tumors, one of which was infiltrating the pericardium, pleura and lung and was judged to be inoperable. The patient died soon after the operation. The other five tumors were apparently benign, though their thick capsules were densely adherent to the pleura covering them and to the pericardium, thereby increasing the difficulty of removal and the risk of the operation. One of the 5 patients with benign tumors died after the operation from pulmonary atelectasis. The other 4 survived the operation, but 2 of them, after improving greatly for a time, had severe relapses of myasthenia and died within three months of respiratory failure. Only 2 of the 6 tumor patients are alive today; 1, two years later, is much better than before the operation. The other was operated on only recently. Of the 51 patients operated on 13 are dead and 38 are alive. Of the 13 fatalities only 8 can be called operative deaths. Of the 33 patients available for a postoperative follow-up 9 are well, 11 are greatly improved, 8 are somewhat improved and 5 show no improvement.

British Medical Journal, London

1:305-342 (March 2) 1946

Diagnosis of Amebiasis. W. E. Kershaw.—p. 305.
*Acroparesthesia in Lower Limbs: Unexplained Pains in Legs at Night. J. P. Martin.—p. 307.
Problems of Diphtheria. J. Grant.—p. 309.
Prefrontal Leukotomy in Treatment of Postencephalitic Conduct Disorder. F. T. Thorpe.—p. 312.
Penicillin in Gonorrhea: Single Injection Method. A. Allan.—p. 314.
*Traveler's Edema. K. Zacopoulos.—p. 322.

Acroparesthesia in Lower Limbs.—Martin reports several cases of acroparesthesias in the lower limbs in men. The tingling is usually described as being in the muscles and is relieved by muscular activity, but the burning sensation in the feet, if present, is superficial and is relieved by putting the foot against something cold. The sensation is the same as that of acroparesthesia in the upper limbs. Not only is the quality of the sensation the same, but both in the upper and in the lower limbs the sensation occurs in sleep; if severe, it awakens the sufferer, and it is relieved by the same means: by putting the affected parts out into the cold, holding them up and exercising

them. Furthermore, in many cases physical exercise taken during the day in bringing about this peculiar discomfort at night is similar in the two instances. The association of these paresthesias with exercise and sleep is puzzling. Paresthesias of the leg are frequent features of the early stages of organic nervous diseases due to dietary deficiencies. They occur also in subacute combined degeneration of the spinal cord, in polyneuritis and in other organic nervous diseases. Paresthesias are also seen in some cases of vascular occlusion and in "immersion feet," in which there is a combined nervous and vascular effect. However, in 1 of the author's patients, even after forty years of paresthesias at night, no signs of organic nervous or vascular disease could be discovered, nor were such signs seen in the other patients. The author has found acetylsalicylic acid most serviceable in relieving these paresthesias.

Traveler's Edema.—Zacopoulos directs attention to a form of edema caused by inactivity to which travelers by sea, rail or road are subject. Among 40 Greek officers who, while escaping to Aleppo, Syria, had an uncomfortable, crowded trip lasting four days, there were 8 who developed edema of the ankles. Another group of Greek officers had to stand for the better part of three days during a journey from Smyrna to Aleppo. Extensive edema had appeared in the lower extremities of every member of this group toward the end of the second day of the journey. None of these men had suffered from excessive malnutrition. It was not a cardiac edema, because careful examination of the cardiovascular system revealed no abnormality. It was not a renal edema, because none had pyrexia, renal pain, oliguria, edema of the eyelids or any other symptom of nephritis. "Deck ankles" probably represent the same condition. He prefers the term traveler's edema to either inactivity or orthostatic edema. Traveler's edema is caused purely mechanically in cases in which there is a great diminution or complete absence of muscular movements of the extremities in persons who are sitting or standing for prolonged periods. Treatment is simple. Repeated active or passive movements of the lower extremities must be started immediately. Tepid bathing of the feet is advisable, with simultaneous massage and passive movements of the toes, ankles and calves. An elastic stocking might be tried in those few cases which do not respond promptly to massage and tepid baths. Travelers must be warned against complete inactivity and whenever possible must avoid standing up during long journeys.

Indian Medical Gazette, Calcutta

80:485-540 (Oct.) 1945. **Partial Index**

Paratyphoid C Fever. S. M. K. Wasti.—p. 485.
Intracranial Herniation Syndromes. H. B. Lal.—p. 489.
Stools in Clinical Sprue. D. A. K. Black.—p. 492.
Position of Vermiform Appendix. M. A. Shah and Mubarika Shah. —p. 494.
4: 4'Diamidino-Diphenyl-Ether in Treatment of Indian Kala-Azar. P. C. Sen Gupta.—p. 495.
*Protein Hydrolysate in Infective Hepatitis. R. Viswanathan.—p. 498.
Sulfanilyl Benzamide in Treatment of Bacillary Dysentery: Preliminary Note. A. R. Majunder, A. K. Bagchi and B. K. Ghosh.—p. 500.
Jaundice in Amebic Liver Abscess: Report of 2 Cases. D. G. Reddy and C. M. Rangam.—p. 501.
New Technic in Sternal Puncture. D. G. Reddy and M. Thangavelu. —p. 502.
Treatment of Kala-Azar with Sodium Antimony Gluconate (Stibatin): Further Observations on Treatment of 32 Cases. K. C. Chakravarty. —p. 507.
Deep Reflexes in Neural Leprosy. R. Subramaniam.—p. 511.

Protein Hydrolysate in Infective Hepatitis.—Viswanathan studied 54 cases for the purpose of assessing the value of protein hydrolysate; 27 were treated with the protein digest, while the remaining formed controls. He concludes that protein hydrolysate has definitely a place in the treatment of infective hepatitis with toxic symptoms. Vomiting disappears and appetite is restored quickly. The liver becomes normal within a shorter period. The degree of jaundice is not appreciably affected in the majority of cases. The sedimentation rate comes down to normal in a shorter time. Better results are obtained in those treated early. He is inclined to believe that if the treatment is instituted in the preicteric or the early icteric stage the results will be more favorable.

Semaine des Hôpitaux de Paris

22:1-46 (Jan. 7) 1946. **Partial Index**

Paroxysmal Arterial Hypertension Caused by Adrenal Paraganglioma (General Brief Outline). C. Lian, F. Siguier and A. Girauld.—p. 1.
Medicosurgical Observation of Paroxysmal Arterial Hypertension Caused by Adrenal Paraganglioma. C. Lian, H. Welti and F. Siguier.—p. 3.
Diagnosis of Common Form of Paroxysmal Arterial Hypertension Caused by Adrenal Paraganglioma, Based on Questioning of Patient. C. Lian, F. Siguier and A. Girauld.—p. 7.
Paradoxical Collapse of Arterial Tension and Sudden Death in Course of Paroxysmal Arterial Hypertension Associated with Adrenal Paraganglioma. C. Lian, F. Siguier and A. Girauld.—p. 7.
*Teleroentgenographic Method for Demonstration of Form and Respective Dimensions of Both Adrenal Capsules. C. Lian, M. Marchal, F. Siguier and A. Girauld.—p. 10.
Minor Form of Paroxysmal Arterial Hypertension Caused by Adrenal Hyperactivity in the Absence of Tumor. C. Lian, H. Welti and F. Siguier.—p. 15.

Teleroentgenographic Demonstration of Adrenal Capsules.—Complete absence of gas in the adrenal area after an enema and after restriction of food and beverages on the eve of the teleroentgenographic examination should first be verified by radioscopy. The patient then is placed in a vertical position with the back against the plate. The x-ray tube must be centered on the eleventh intercostal space so that the normal incident ray is tangent to the superior pole of the adrenals. The teleroentgenogram should be made at a distance of 1.5 meters during expiration, with a radiation of about 80 kilovolts. The time of exposure should be the shortest the apparatus permits. By using this method in 3 cases of adrenal hypertrophy, Lian and his associates succeeded in demonstrating not only the size of both adrenal capsules but also their contours. An irregular hypertrophy is manifested by sharp outlines, while the visible superior pole of the capsule appears circular instead of oval. A regular hypertrophy, i. e. a simple hyperplasia, is indicated by smooth outlines, while the superior pole of the capsule shows the roentgenographic oval. Very slight anomalies can be demonstrated by this method where others may fail.

Schweizerische medizinische Wochenschrift, Basel

75:917-940 (Oct. 20) 1945. **Partial Index**

Clinical Significance of Differentiation and Typification of Bacteria. A. Grumbach.—p. 917.
Osteomas and Hyperostoses of Superior Maxilla. E. Lüscher.—p. 924.
*Tonsillectomy and Tuberculous Lymphomas of Neck. H. Wissler.—p. 927.
Cholinesterase of Blood and Arterial Hypertension: Preliminary Note. L. Libbrecht.—p. 928.

Tonsillectomy and Tuberculous Lymphomas of Neck.—Wissler investigated the course of 63 patients who had had tonsillectomy for tuberculous lymphomas of the neck. Twenty-two later had relapses or exacerbations, 28 remained free from them and in the other 13 the later course could not be learned. The author concludes that removal of tonsils does not prevent the progression of tuberculosis of the cervical lymph nodes. However, in certain cases tonsillectomy may aid in the closure of long standing fistulas.

Rev. de Medicina e Cirurgia de São Paulo

5:173-244 (July-Aug.) 1945. **Partial Index**

*Penicillin Therapy in Case of Tabes Dorsalis. L. Sales Gomes.—p. 173.
Dysontogenetic Tumors of Renal Cortex. R. Escobar Pires.—p. 183.
Adrenal Problem in Tropical Pemphigus. J. R. Alves Guimaraes and J. P. B. Vieira.—p. 229.

Penicillin in Tabes Dorsalis.—Sales Gomes administered penicillin to a man aged 78 with tabes dorsalis of two years' duration. The patient had paralysis of the lower extremities, lightning pains, gastric disturbances and urinary incontinence and was in poor general condition. Tabes had become manifest more than fifty years after the syphilitic infection. Penicillin was injected daily for seven days into the spine. Simultaneously penicillin was administered by intramuscular injection for ten days. The total doses were 297,500 units intrathecally and 812,500 intramuscularly. At the termination of this treatment the patient had a severe gastric crisis, which probably resulted from the intense alkalization with the sodium penicillin and the large quantities of dextrose solution. Several weeks after the penicillin therapy the lightning pains were relieved by about 75 per cent in frequency and intensity, urinary incontinence and gastric disturbances disappeared and the general condition improved greatly. There was a return of some of the reflexes.

Book Notices

Diseases of the Nose, Throat, and Ear, Including Bronchoscopy and Esophagoscopy. Edited by Chevalier Jackson, M.D., Sc.D., LL.D., and Chevalier L. Jackson, M.D., M.Sc., F.A.C.S., Professor of Broncho-Esophagology, Temple University, Philadelphia. With the Collaboration of Sixty-Four Outstanding Authorities. Cloth. Price, $10. Pp. 844, with 934 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

This new textbook is a welcome addition to a field in which new conceptions of pathogenesis and therapy have been rapidly accumulating as horizons have expanded. Since however it is for the most part a compilation of the work of some sixty-four contributors, it is natural that one will note differences in style and emphasis. This is apparant as one peruses the text and it detracts considerably from the fluidity and continuity which can come only from the pen of a single author. Also one will find that certain topics are overstressed to the disadvantage of others which are not too thoroughly covered. However, on the whole one may say that the material is adequately presented. Special mention should be made of the chapters covering the otologic and laryngologic subjects, which are given in great detail with clarity and authority. Also one will note with pleasure the inclusion of such topics as trauma involving the sinuses and facial structures as well as plastic repair of nasal and aural defects. There is much that is new in the book, such as chapters on aviation otology, photography of the air passages, therapy and anesthesia. Also the discussions of the various neuralgias and psychosomatic problems affecting patients with laryngologic symptoms are timely additions. On the other hand, one cannot help but note the absence of any special treatment of the subject of sinusitis in children and the meager coverage of the subject of tonsillectomy, in which a surgical procedure is described that is not representative of the one more generally practiced; also it is regrettable that the subject of nasal allergy is given so little space. Nevertheless the book is well worth while, since in one volume it is comprehensive enough to serve the needs of the average practitioner. A large number of excellent illustrations properly labeled and distributed help materially to illuminate the text.

Colloid Chemistry Theoretical and Applied. By Selected International Contributors. Collected and Edited by Jerome Alexander. Volume VI: General Principles and Specific Industries, Synthetic Polymers and Plastics. Cloth. Price, $20. Pp. 1,215, with illustrations. New York: Reinhold Publishing Corporation, 1946.

This is the last of a six volume series published over a period covering the past two decades (volume I, 1926) that deal with various phases of colloid chemistry. The series covers a diversity of scientific interests represented by the contributions of numerous authorities in the field that have been collected and edited by the author. Volume V: Theory and Methods, Biology and Medicine, reviewed in THE JOURNAL, June 23, 1945, illustrates the wide range of application that colloid chemistry has engendered.

The present volume, as suggested by the title, is divided into two sections: part I, dealing with general principles and specific industries, and part II, dealing with synthetic polymers and plastics. In addition, at the end there are three appendixes, a special table of dimensions and the usual author and subject indexes. The two main parts comprise 71 papers—38 in the first, 33 in the second. The appendixes consist of three brief supplements to papers in the main body of the book, two of which supply additional information concerning the commercial production of synthetic rubber and penicillin that was withheld from publication during the war. The editor has himself contributed a general article on nuclear fission and atomic energy that appears as the last of the papers in part I and serves admirably to provide timely information on this important topic.

The book for the most part contains papers on subjects of primary interest to the chemist and physicist, particularly with respect to the application of colloid chemistry to industrial and technologic methods involved in processes or products of manufacture. A few of the papers are theoretical, but most of them are of practical interest to persons engaged in scientific methods of production. Of technical interest to those engaged in the medical sciences are the papers in part I on electron microscopy and the skin and its technologic hazards. (The previous volume of the series contained in its second part much more information on the applications of colloid chemistry to medicine.) The other papers of this section cover a wide variety of subjects from the surfaces and nature of solids, adhesives and drilling fluids to the colloidal activity of greases, metals, soaps and paints.

Part II of the book is introduced by another contribution of the editor on the behavior of plastics. The other papers of this section (except the last on nuclear fission) are devoted almost entirely to the industrial chemical aspects of celluloses, resins, plastics and other synthetic polymers. These should be of special interest to those engaged in the development of new structural materials or methods of improving synthetic materials already in use.

The contributors of the various papers constitute an imposing list of authorities too lengthy to supply in detail. Among those represented, in addition to the editor, may be mentioned William D. Harkins, Norman D. Coggeshall, J. K. Zworykin, E. A. Hauser, Lawrence H. Flett, Joseph Stanley, Alfred E. Gutman, R. W. Albright, Hans F. Winterkorn, C. K. Tseng, Frank C. Combes, W. A. Helbig, A. E. Young, Alan F. Randolph and James R. Patterson. The papers are arranged so that each, together with its list of references, forms a chapter of the book. The editor has successfully arranged the order of the chapters to attain a high degree of organization of the greatly varied topics presented. The editing has also been well done, as evidenced by the comparative freedom from typographic and other sources of error peculiar to a work of this kind.

Viewed as a whole, this book should prove to be a valuable reference to the industrial chemist, chemical and technologic libraries, as well as for those interested in so-called pure science.

Pensée de Pasteur. Par Charles Oulmont. Paper. Pp. 103. Lisbon: L'Instituto Pasteur de Lisboa, 1945.

With sympathy and a delicate touch, the life and mind of Pasteur are sketched from the time when the sensitive boy of 13 divided his interest between his studies and his portraits in pastel of Arbois neighbors through the labors and triumphs of his work on fermentation and infectious diseases, the establishment of the germ theory and the development of vaccine therapy: labors only partly interrupted by the attack of paralysis which seemed to threaten his career at its height. But this is not a recital of dramatic success; the author's affectionate admiration is compelled by the character of the man, his loving-kindness, his determination, his invincible integrity, his deeply religious outlook in science and life alike. "My philosophy is all of the heart and not of the mind." The relentless investigator who asked for eloquence in facts and not in words masked the devoted son and the tender father; and to the long-loved companion, sweetheart and wife, he gave his humble and honest pledge—"I belong to you and to Science for all my life."

This is a perfect example of G. Stanley Hall's "higher ideal man": "He will merge and perhaps efface himself in his cause or task; although greatest, he will be content to be thought least; he will be vastly more naive than self conscious and will place the good of others before that of himself. . . ."

Rehabilitation at Lake Tomahawk State Camp: A History. By Harold Holand, Director, Research Department, Wisconsin Anti-Tuberculosis Association. Cloth. Price, $1. Pp. 46, with 6 illustrations. New York: National Tuberculosis Association, 1945.

This book deals with the Lake Tomahawk State Camp for the rehabilitation of the tuberculous, operated by the state of Wisconsin at Tomahawk Lake, in the northern forest area of that state. The book gives an account of the establishment of the institution and a description of its general character and of its working plans. It gives also careful statistical studies of the result of rehabilitation. For the most part these results have been favorable, but there has been a certain percentage of reentry into the sanatorium among the patients who have been treated or perhaps one had better say rehabilitated at the Tomahawk Lake Camp. This percentage is smaller than the percentage of patients who have been readmitted to sanatoriums without the advantages of such rehabilitation as at Tomahawk Lake. The book contains information of value to those interested in the rehabilitation of the tuberculous, especially those who may be planning camps and other rehabilitation projects.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

NEUROVASCULAR SYNDROME OF ARMS DUE TO HYPERABDUCTION

To the Editor:—A white man aged 33 has had weakness of the hands for sixteen years associated with tingling and numbness on exercise. These symptoms are relieved by rest or by allowing the arms to remain pendent for some time. Elevation of the arms produces tingling of the hands. Examination reveals some reddening of the skin and slight thickening of the hands. The lower extremities are not involved at all. Complete neurologic examination is negative. The patient's mother has been subject to the same disorder for over thirty years. Although the more gross neuropathies have been considered, such as disseminated sclerosis, syringomyelia, cord tumor, cervical rib, scalenus anticus syndrome and the neuritides, corroborative evidence has not been found. The symptomatology does not resemble any of the ordinary vascular diseases.

Sidney N. Mandell, M.D., Union City, N. J.

ANSWER.—The syndrome as explained in the query suggests one of the neurovascular syndromes produced by pressure or torsion of the blood vessels and nerves between the posterior surface of the clavicle and the anterior surface of the first rib, and accentuated with hyperabduction of the arms due to torsion and pressure behind the pectoralis minor and underneath the coracoid process. The subclavian axillary artery is frequently involved in one or both of these areas as well as the nerves of the brachial plexus.

A complete description of this type of syndrome is to be found in the paper by I. S. Wright (*Am. Heart J.* **29**:1 [Jan.] 1945). The patients described in that paper developed their syndromes for the most part as a result of sleeping with the arms in the hyperabducted position. In 1 instance this progressed to the point of gangrene of the fingers. A study of 150 young adults revealed that a pulse of the arm can be obliterated in the position of hyperabduction in approximately 83 per cent of all normal persons, although in some instances this is difficult. Some individuals were seen whose radial pulses disappeared when the arms were abducted beyond the 90 degree angle in the median plane.

Patients have been seen in whom these syndromes are produced by their occupation. These include painters and riveters of the undersurfaces of airplane wings. Attention should also be called to the article by M. A. Falconer and Graham Weddell (*Lancet* **2**:539 [Oct. 30] 1943), which describes a similar syndrome produced by downward and backward pressure of the clavicle against the first rib. It was noted in soldiers of the British army who wore heavy packs. This syndrome can also be produced by relaxation of the muscles which normally support the clavicle, provided the shapes of the clavicle and the first rib are such that they encourage easy obliteration of the normal space of that area.

If the syndrome is produced by hyperabduction, this should be avoided. Those who sleep in such a position must be trained to sleep with their arms by their sides. Those in whom an occupational factor is important must readjust their employment. In other instances it is necessary to use exercises to develop the muscles responsible for holding the clavicle in the proper position. Falconer and Weddell described surgery involving the production of a groove by operation on the first rib. This will probably not be necessary for many patients. A table of differential diagnosis regarding these neurovascular syndromes is included in the paper by Wright.

DERMATITIS FROM "SIZES"

To the Editor:—A man has developed a dermatitis of the face and hands while working at "sizing" straw hats. I believe that the sizing consists of a coal tar, nitrocellulose and ethyl butyl. Please send me any information pertaining to the cause, prevention and treatment of the dermatitis. I would appreciate if you could also check on the composition of the sizing.

M.D., New York.

ANSWER.—Dermatitis from "sizes" may be the result of primary irritation from the solvent contained in the size. Such a dermatitis will result if the hands are frequently soiled with the size, especially in thin, dry skinned persons.

The stiffener in the size may be a natural or a synthetic resin. Natural resins such as rosin, manila gum and shellac are used. Synthetic resins such as ethyl cellulose and nitrocellulose may also be used, as may sodium silicate, or water glass. Usually there is some alkali content in the size, especially if a natural resin is used, and there is considerable water in the solvent. No formulas for size containing coal tar have been found in the available technical books.

Dermatitis of the face from sizing usually occurs because the soiled fingers are applied to the face in scratching and other unconscious movements, very much as is the case with nail lacquer dermatitis.

In order to ascertain which ingredient in the size is the actual cause of the dermatitis, it is suggested that patch tests be performed with each of the ingredients except the solvent. This can be done by ascertaining the ingredients from the manufacturer. If the ingredients cannot be ascertained from the manufacturers, some of the size may be applied to a piece of gauze 1 inch square and allowed to dry. The gauze can then be applied as a patch test on the patient. This will give information as to whether the solid ingredients or the solvent are the actual cause of the dermatitis. Dermatitis from the solid ingredients is on an allergic basis, whereas dermatitis from the solvent is primary irritation.

Prevention of dermatitis in the case under question will consist in avoiding soiling the hands with the size either by wearing rubber gloves or by using long handled brushes for applying the size, depending on how the work is performed. The patient should be warned to keep soiled hands or even soiled gloves off the face. The frequent washing of soiled hands during the day is also a useful preventive measure.

Treatment of the condition consists in preventing further contact and applying mild medicaments such as wet dressings of Burow's solution 1:20, if the dermatitis is acute and vesicular, or using mild ointments such as zinc ointment or even a simple emollient cream if the dermatitis is of the chronic dry type.

SEVERE PRURITUS IN RETURNING VETERANS

To the Editor:—A number of returning veterans have come under my attention seeking relief from a rather severe urticaria. They state that, on leaving Europe, as far as they knew their condition was normal. About seven days after leaving European shores this seven day type of urticaria began to manifest itself. There are no skin manifestations except excoriations due to scratching. I have been giving the patients intravenous calcium gluconate and vitamin B complex and soothing baths, but treatment has not been long enough to expect results. Can this condition be a contact dermatitis, a food allergy or a neurologic mechanism? What therapy would best facilitate improvement?

Michael G. Frich, M.D., Monessen, Pa.

ANSWER.—"Urticaria" without skin manifestations developing after seven days in the crowded troop ships might be merely itching due to the crowded conditions, the stuffy hot air and the lack of bathing facilities. Another possible factor might be the diet with irregular feedings and irregular bowel function as well as the general nervous excitement. Treatment should be directed toward each of these factors, and that means cleanliness, rest, pleasant peaceful surroundings, fresh air and a good general diet.

SEX DIFFERENCES IN STILLBIRTH RATES

To the Editor:—Is there any truth in the statement that "some women cannot carry a boy baby until birth"? If there is any truth in this statement what would be the possible reason?

M.D., Kansas.

ANSWER.—There is absolutely no truth in the statement quoted. Perhaps it is based on the fact that whereas the ratio of males to females at birth is 105 to 100, the stillbirth rate is about 130 males to 100 females and the sex ratio for early abortions is about 160 males to 100 females.

ALTITUDE AND HEART DISEASE

To the Editor:—Regarding the query in The Journal, April 6, 1946, page 981, on altitude and heart disease, I have no quarrel with the answer to the question from an academic standpoint—it was my assignment during the war to be director of the Altitude Training Unit at Yuma Army Air Field and during the war I supervised some 50,000 men at simulated altitudes at several air fields. During this time we all observed factors which are not explained by alveolar oxygen tensions—in fact none of the research explanations of the A. A. F. satisfactorily explained all the effects of altitude simulation. Not all of the unusual effects of decompression were limited to very high altitude simulation. I have had experiences with older officers and enlisted men at altitude simulations of 6,000 to 8,000 feet which convinced me that patients such as the one discussed would be benefited by both (1) increasing oxygen tension in the room and increasing atmospheric pressure in the room. I am not discussing practicability. It would obviously be easier to move to sea level. However, I am convinced that the patient would receive material and evident clinical comfort from a pressurized room—comfort that a simple increase in oxygen would not give.

Robert J. McNeil, M.D., Los Angeles.